



**GOKUL
GLOBAL
UNIVERSITY**

Approved By Govt. of Gujarat
(Recognized by UGC under Section 22 & 21) of 1956)
(Gujarat Private State University Act 4 of 2018)

COURSE OUTCOME

FACULTY OF ENGINEERING



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(Gujarat Private State University Act 4 of 2018)

Bachelor of Engineering (B.E.) Civil Engineering

**Batch 2018-21
Program Outcomes (PO)**

Gokul Global University, Sidhpur



PROGRAM OUTCOMES (PO)

- PO1 **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2 **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3 **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4 **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5 **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO6 **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7 **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8 **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9 **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10 **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11 **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12 **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



PROGRAM SPECIFIC OUTCOMES (PSO)

PSO-1: Applying the Civil Engineering Principles and using suitable software to analyze, design, preparing drawings, reports and estimates for Civil Engineering Structures.

PSO-2: Ability to conduct field and laboratory tests, surveys as per the Indian Standards for different Civil Engineering Projects and Materials



COURSE OUTCOMES

On completion of the course students will be able to

Course Code	Course Name	Course Outcome
Course Outcomes Semester -I		
FEB110001	Engineering mathematics-I	<ol style="list-style-type: none">1. To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions.2. To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics.3. To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables.4. Mathematics has the potential to understand the core Technological studies5. To compute the areas and volumes using multiple integral techniques.6. To perform matrix computation in a comprehensive manner.
FEB110202	Elements Of Mechanical Engineering	<ol style="list-style-type: none">1. To understand the fundamentals of mechanical systems2. To understand and appreciate significance of mechanical engineering in different fields of engineering3. Enhancement of fundamental knowledge of Thermodynamics4. Enhancement of fundamental knowledge of Fluid Mechanics and I.C. Engines5. Acquiring knowledge of materials and their properties for engineering applications6. Evaluate properties of steam. Demonstrate various types of boilers and their relative merits and demerits. Learning problem solving in particular domain.



FEB110003	Communication skill	<ol style="list-style-type: none">1. Understand the basics of communication and its significance to the career as an engineer.2. Comprehend and express any idea/thought in an effective manner using the four basic communication skills: Listening, Reading, Speaking, and Writing (LSRW).3. Make effective presentation, face job interview and participate in group communication fruitfully.4. Handle various professional communication situations more impressively and effectively.5. The student will acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills.
FEB110304	Element of Electrical Engineering	<ol style="list-style-type: none">1. Understand electrical current, potential difference, power and energy, sources of electrical energy, resistance and its behavior with temperature.2. Use the Ohm's Law and the Kirchhoff's Law and star delta transformation for solving resistive series, parallel and series-parallel circuits.3. Define Electric field, lines of force, electric field intensity, electric flux, flux density and permittivity. Capacitor, charging and discharging phenomena of capacitors and calculations of capacitance for capacitors connected in series and parallel circuits.4. Understand Concepts of Real power, Reactive power, apparent power and Power factor and perform calculations of these quantities for series and parallel R-L-C circuits.5. Understand the importance of safety and the precaution to be taken while working with electrical equipment and accessories. Understand the working principle, usage and construction of circuit protection devices such as fuse, MCB, ELCB & Relays
FEB110006	Engineering physics-I	<ol style="list-style-type: none">1. Able to understand, necessary parameters of different materials in different domains.2. Demonstrate the behavior of material in different fields based on their properties.3. Enhance practical capability and skills for modules using different materials and selection of material for system designs.4. The student will demonstrate understanding of basic theory, properties and applications of Superconductivity5. The student will demonstrate understanding the basic



		principles, properties and applications of associated with Waves, Motion and Acoustics. 6. The student will demonstrate understanding of basic principles, properties, type and application Lasers.
FEB110206	Basic Workshop	1. To acquire skills in basic engineering practice 2. To acquire practical skills in the trades 3. Understand modern manufacturing operations, including their capabilities, limitations, and how to design economically. 4. Welding and soldering operations 5. Identify and apply suitable tools for machining processes including turning, facing, thread cutting and tapping.

Course Code	Course Name	Course Outcome
Course Outcomes Semester -II		
FEB120001	Engineering mathematics-II	1. To apply mathematical tools needed in evaluating vector calculus and their usage like Work, Circulation and Flux. 2. To apply the Laplace transform as tools which are used to solve differential equations and Fourier integral representation. 3. To apply effective mathematical tools for the solutions of first order ordinary differential equations. 4. To apply effective mathematical methods for the solutions of higher order ordinary differential equations. 5. To implement the solution for engineering problem to use series solution methods and special functions like Bessel's' functions.
FEB120102	Element Of Civil Engineering	1. Carry out simple land survey to prepare maps with existing details. 2. Find out area of irregular shaped plane figures. 3. Understand building plan elevation and section. 4. Get acquainted with construction materials. 5. Get acquainted with hydrological cycle and hydraulic structures. 6. Get acquainted with mass transportation systems.



FEB120403	Computer Programming With C	<ol style="list-style-type: none">1. Understand the fundamentals and structure of a C programming language2. Apply the loops, arrays, functions and string concepts in C to solve the given problem3. Apply the pointers and text input output files concept to find the solution for the given applications.4. Use the Enumerated, Data types, Structures and Unions.
FEB120204	Engineering Graphics	<ol style="list-style-type: none">1. To know and understand the conventions and the method of engineering drawing2. Identify the Drawing Symbols, Conventions used in Engineering Drawing3. Construct the Different types of Engineering Curves.4. To improve their visualization skills so that they can apply these skill in developing new products.5. Apply Descriptive Geometry Principles to Solve Engineering Problems Involving Points, Lines, Planes and Solids6. To improve their technical communication skill in the form of communicative drawings
FEB120105	Environmental Science	<ol style="list-style-type: none">1. Students are able to learn types of disasters and its profile in India.2. Students are able to understand the causes and impacts of disasters on environment and related case studies of Global and National disasters.3. Students are able to learn about risk reduction approaches of disasters with safety issues in mitigating industrial disasters.4. To understand the concept of Disaster Management Cycle and its Risk Reduction Measures5. Students to learn the National Acts and policies for mitigating disasters, Role of Army, Police, Community, Corporate, Media etc. for post Disaster Management..



Course Code	Course Name	Course Outcome
Course Outcomes Semester -III		
FEB130001	Effective Technical Communication	<ol style="list-style-type: none">1. Define and discuss dynamics of Verbal and Non Verbal aspects of Communication2. Write various formal documents of technical and professional communication3. Communicate in diverse formal situations taking place in organizations4. Illustrate and examine the knowledge of ethical aspects of engineering5. Demonstrate and explain social and professional etiquettes6. Plan self-development and practice self-assessment
FEB130002	Indian Constitution	<ol style="list-style-type: none">1. Enhance human values , create awareness about law enactment and importance of Constitution2. To Understand the Fundamental Rights and Fundamental Duties of the Indian Citizen to instill morality, social values, honesty, dignity of life and their social Responsibilities.3. Create Awareness of their Surroundings, Society, Social problems and their suitable solutions while keeping rights and duties of the citizen keeping in mind.4. Understand distribution of powers and functions of Local Self Government.5. Understand the National Emergency, Financial Emergency and their impact on Economy of the country.
FEB130101	Engineering Mathematics –III (Transform & Discrete Mathematics)	<ol style="list-style-type: none">1. convert complex number in a polar form, plot the roots of a complex number in complex plane, find harmonic conjugate of analytic functions and apply conformal mapping in geometrical transformation2. evaluate complex integration by using various results, test convergence of complex sequence and series and expand some analytic function in Taylor's series3. find Laurent's series and pole of order, and apply Cauchy Residue theorem in evaluating some real integrals4. understand the central tendency methods and apply it in civil problems5. find unknown value of given data by using various interpolation methods and curve fitting6. calculate integration and solve differential equations by using numerical methods



FEB130102	Building Construction Technology	<ol style="list-style-type: none">1. To identify various components of building structures2. To propose suitable type of foundation for building structures3. To select suitable type of masonry for building structures4. To propose relevant means of communications for different types of buildings CO-5: To select relevant material for finishing works
FEB130103	Engineering Geology	<ol style="list-style-type: none">1. Know soil formation, types of soils, types of soils found in various parts of India.2. Determine the index properties and interrelationships between various soil parameters.3. Understand the different types of soil classification systems. Classify field soils as per particle size and atterberg's indices.4. Know types of soil water found in nature, its permeability characteristics and seepage determination.5. Site characterization and how to collect, analyze, and report geologic data using standards in engineering practice
FEB130104	Mechanics Of Solids	<ol style="list-style-type: none">1. Apply fundamental principles of mechanics, equilibrium and statics to practical problems of engineering.2. Determine centroid and moment of inertia of a different geometrical shape and its use in engineering problem.3. Apply the law of static friction in simple applications4. Determine different types of stresses and strains developed in the member subjected to axial, bending, shear, torsion & thermal loads.5. Differentiate behavior and properties of different engineering materials.6. Apply the basics of simple machines and their working mechanism



Course Code	Course Name	Course Outcome
Course Outcomes Semester -IV		
FEB140001	Essence Of Indian Traditional Knowledge	<ol style="list-style-type: none">1. Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective2. Identify the concept of Traditional knowledge and its importance. Explain the need and importance of protecting traditional knowledge.3. Explain the need and importance of protecting traditional knowledge4. Illustrate the various enactments related to the protection of traditional knowledge.5. Interpret the concepts of Intellectual property to protect the traditional knowledge6. Explain the importance of Traditional knowledge in Agriculture and Medicine.
FEB140101	Building and Town Planning	<ol style="list-style-type: none">1. Comprehend local building bye-laws and provisions of National Building Code in respect of building and town planning resulting in functionally efficient, economically viable and legally acceptable buildings.2. Discuss and apply various aspects of principles of building planning and town planning3. Understand and implement various aspects of Principles of Architectural composition4. Explain the principles of planning and design considerations to construct earthquake resistant building5. Understand, interpret and prepare working drawings, foundation plans, perspective drawing and other executable drawings and prepare the drawing using software
FEB140102	Civil Engineering Global & Social Impact	<ol style="list-style-type: none">1. Describe about recent civil engineering breakthroughs & innovates2. Explain the awareness of various codes & standards governing infrastructure development3. Describe about environmental metrics & monitoring4. Explain the sustainability of structure and environment5. Explain the innovations and methodologies for ensuring sustainability during project development



FEB140103	Fluid Mechanics	<ol style="list-style-type: none">1. Understand the broad principles of fluid statics, kinematics and dynamics2. Understand definitions of the basic terms used in fluid mechanics3. Understand classifications of fluid flow4. Be able to apply the continuity, momentum and energy principles5. Be able to apply dimensional analysis
FEB140104	Materials, Testing & Evaluation	<ol style="list-style-type: none">1. Identify clay based products for use in building constructions based on its properties.2. Appreciate the uses of lime and Pozzolana products in building construction.3. Select appropriate ingredients of proper quality for cement concrete as per required BIS codes.4. Describe timber and wood products and its uses in building construction.5. Identify different types of advanced building materials and their uses in construction.
FEB140105	Structural Analysis-I	<ol style="list-style-type: none">1. Apply principles of statics to determine reactions & internal forces in statically determinate structures.2. Determine displacements of statically determinate structures.3. Determine stresses due to axial & eccentric loading.4. Determine buckling load for columns & struts with different end conditions.5. Determine fixed-end actions for various types of loads
FEB140106	Surveying	<ol style="list-style-type: none">1. Apply the knowledge, techniques, skills, and applicable tools of the discipline to engineering and surveying activities2. Translate the knowledge gained for the implementation of Civil infrastructure facilities3. Relate the knowledge on Surveying to the new frontiers of science like Hydrographic surveying, Electronic Distance Measurement, Global Positioning System, Photogrammetry and Remote Sensing4. Relate the knowledge on Surveying to the new frontiers of science like Global Positioning System, Photogrammetry and Remote Sensing5. To understand practical knowledge of process of theodolite and tacheometry survey.



Course Code	Course Name	Course Outcome
Course Outcomes Semester -V		
FEB150001	Engineering Economics & Management	<ol style="list-style-type: none">1. To impart knowledge, with respect to concepts, principles and practical applications of economics, which govern the functioning of a firm/organization under different market conditions.2. To help the students to understand the fundamental concepts and principles of management; the basic roles, skills, functions of management, various organizational structures and basic knowledge of marketing.3. To help the students to understand the principles of management and basic knowledge of marketing4. To understanding of the fundamental concepts of Managerial economics and demand.5. The ability to apply knowledge to evaluate future demand and theory of production.
FEB150101	Hydrology and Water Resources Engineering	<ol style="list-style-type: none">1. Understand the interaction among various processes in the hydrologic cycle2. Apply the application of fluid mechanics and use of computers in solving a host of problems in hydraulic engineering3. Study types and classes of hydrologic simulation models and design procedures for safe and effective passage of flood flows for design of hydraulic structures4. Understand the basic aquifer parameters and estimate groundwater resources for different hydro-geological boundary conditions5. Understand application of systems concept, advanced optimization techniques to cover the socio-technical aspects in the field of water resources6. Apply the principles and applications of remote sensing, GPS and GIS in the context to hydrological extreme flood and drought events in water resources engineering



FEB150102	Soil Engineering - I	<ol style="list-style-type: none">1. Classify the soil and will be able to understand its behaviors and will be able to compute/estimate index parameters.2. Interpret soil behaviors through learning soil compaction, consolidation, and analyses various theories and calculate parameters needed in design.3. Compute earth pressure, stress distributions and FOS for slopes using various graphical and analytical tools for various engineering projects/site.4. Differentiate, compare, formulate, and evaluate soil parameters through performing various tests as per site conditions or project needs ethically and professionally.5. Suggest suitable type of foundation as per soil type, estimate bearing capacity and demonstrate its socio-economic feasibility.
FEB150103	Structural Analysis II	<ol style="list-style-type: none">1. State various methods used to analyses determinate and indeterminate structures.2. Apply equilibrium and compatibility equations to determine response of statically determinate and indeterminate structures.3. Select suitable method to find displacements and internal forces of statically indeterminate structures.4. Prepare influence line diagrams for determinate and indeterminate structures5. To determine reactions and internal forces when subjected to moving loads.
FEB150104	Transportation Engineering I	<ol style="list-style-type: none">1. Know about highway planning and its classification2. Carryout geometric design of highway3. Carryout laboratory tests on aggregates and bituminous materials4. Carryout preliminary design of flexible and rigid pavement5. Know about pavement failures, its maintenance, importance of drainage, hill roads and their challenges6. Carryout survey of classified traffic volume count and spot speed study on highway7. Know about importance and working of different traffic control devices



FEB150105	Air Pollution & Control	<ol style="list-style-type: none">1. Identify sources, causes and effects of air pollution.2. Analyze the environmental effects of air pollution on humankind, plant and animal kingdoms.3. Identify the meteorological components4. Take basic actions to minimize air pollution, prevention and control5. Maintain scrubbing system to control specific gaseous emission.6. Follow the laws and regulations of air pollution prevention and control at the local, state and country level.
FEB150106	Infrastructure Planning	<ol style="list-style-type: none">1. Comprehend local building bye-laws and provisions of National Building Code in respect of building and town planning resulting in functionally efficient, economically viable and legally acceptable buildings.2. Discuss and apply various aspects of principles of building planning and town planning3. Understand and implement various aspects of Principles of Architectural composition4. Explain the principles of planning and design considerations to construct earthquake resistant building5. Understand, interpret and prepare working drawings, foundation plans, perspective drawing and other executable drawings and prepare the drawing using software

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Course Outcomes Semester -VI		
FEB160001	Cyber Security	<ol style="list-style-type: none">1. Understand the various tools and methods used in cybercrime.2. Identify risk management processes, risk treatment methods, organization of information security.3. Classify cyber security solutions and information assurance4. Examine software vulnerabilities and security solutions to reduce the risk of exploitation5. Analyze the cyber security needs of an organization6. Understand key management issues and algorithms



FEB160002	Remote Sensing and GIS	<ol style="list-style-type: none">1. Observe, Identify and define simple/ complex problems of day to day lives present in Industry/ Society where GIS and Remote Sensing applications can be useful.2. Apply knowledge of basic image interpretation and data image processing.3. Integrate the existing data through various observations from various angles and layer creation.4. Apply problem-solving methodologies to generate, evaluate and justify innovative solutions by designing and conducting/ analyzing and interpreting the data.5. Demonstrate the ability to give solutions with an ability which can help communicate effectively for giving better interpretation and solutions.
FEB160101	Environmental Engineering	<ol style="list-style-type: none">1. Understand the role of microorganisms in various components of environments2. Understand the quality and characteristics of waste water3. Design and prepare drainage plan of buildings4. Understand and design solid waste management system5. Understand various types of pollution6. Understand various environmental Acts.
FEB160102	Hydraulic Engineering	<ol style="list-style-type: none">1. The students will be able to apply their knowledge of fluid mechanics in addressing problems in open channels.2. They will possess the skills to solve problems in uniform, gradually and rapidly varied flows in steady state conditions.3. They will have knowledge in hydraulic machineries (pumps and turbines).4. Analyze and design streamlined objects considering boundary layer effects.5. Carry out model studies for fluid flow problems
FEB160103	Soil Engineering – II	<ol style="list-style-type: none">1. Select appropriate soil investigation/testing technique/method and get true sub soil parameters used for selection of type of foundation as per codal guidelines.2. Select and design appropriate/suitable foundation system (shallow/Deep) for different structures that satisfy the allowable bearing capacity and settlement requirements based on soil properties.3. Design deep foundation satisfying bearing capacity and



		<p>settlement requirements.</p> <ol style="list-style-type: none">4. Design and analysis of retaining walls and sheet piles under static loads.5. Understand the engineering behavior of expansive soils and selection of suitable foundation type for such soils.
FEB160104	Transportation Engineering- II	<ol style="list-style-type: none">1. Know about railway track components, their materials, size, function and importance2. Carry out geometric design of railway track3. Know about various components in diverging, merging and crossings of railway tracks, stations, yards, signaling, interlocking and control systems.4. Know about requirements of railway track for high-speed trains, safety aspects and maintenance5. Understand about different types of bridges, their components, loads/stresses acting on bridges, requirement and function of the components, hydrological design, methods of erection, maintenance of bridges.6. To understand the various elements of Harbour and Airport
FEB160105	Concrete Technology & Repair Strategy	<ol style="list-style-type: none">1. Understand the objects and necessity of repair and rehabilitation of structures2. Comprehend the deterioration mechanism of concrete structures3. Understand the cracking of concrete and it's preventive measures4. Discuss the structural health monitoring and it's techniques5. Converse the techniques and materials for the repair
FEB160106	Disaster Assessment Using Geospatial Techniques	<ol style="list-style-type: none">1. Use GIS and GPS techniques for location-based mapping and monitoring2. Address issues pertaining to resource identification, distribution, allocation through RS and GIS techniques3. Analyze the pre and post disaster conditions for smoothen the functional mechanism4. Visualize hazard and risk information5. Employ risk information in emergency preparedness planning



Course Code	Course Name	Course Outcome
Course Outcomes Semester -VII		
FEB170001	Integrated Personality Development	<ol style="list-style-type: none">1. To provide students with a holistic education – focused on increasing their intelligence quotient, physical quotient, emotional quotient and spiritual quotient.2. To provide students with hard and soft skills, making them more marketable when entering the workforce.3. To educate students on their social responsibilities as citizens of India and have a greater sense of social responsibility.4. To provide students with a value-based education which will enable them to be successful in their family, professional, and social relationships by improving their moral and ethical values?5. To teach self-analysis and self-improvement exercises to enhance the potential of the participants.6. To have a broader sense of self-confidence and a defined identity.
FEB170002	Metro Systems & Engineering	<ol style="list-style-type: none">1. Know about metro track components, their materials, size, function and importance2. Routing studies; Basic Planning and Financials3. Importance of tunnel in metro system4. Concepts of traffic integration, multimodal transfers and pedestrian facilities.5. Signaling systems; automatic fare collection; Operation Control Centre (OCC and BCC); SCADA and other control systems; Platform Screen Doors.
FEB170101	Professional Practice and Valuation	<ol style="list-style-type: none">1. Work out (i) the estimated cost of any proposed civil engineering structure and (ii) The value of any old structure2. Apply the software for working out quantities of items of civil works3. Prepare rate analysis, specifications, tenders and contract of different civil work.4. Prepare approximate and detailed estimate of a civil engineering work.5. Solve examples on valuation of properties/ buildings.



FEB170102	Structural Design -I	<ol style="list-style-type: none">1. Understand various design philosophy to be used in the design of structural elements.2. Design basic structural elements like slab, beams, columns and foundation etc. using steel and concrete as materials3. Design basic structural beams and columns using limit state approach.4. Design a slab using limit state approach.5. Design foundation using limit state approach.
FEB170103	Earthquake Engineering	<ol style="list-style-type: none">1. Determine the response of SDOF & MDOF structural system subjected to vibration including earthquake.2. Apply the concept of Earthquake Resistant Design & concept of lateral load distribution on buildings.3. Determine the lateral forces generated in the structure due to earthquake.4. Apply the concept of ductile detailing in RC structures.
FEB170104	Urban Transportation Planning	<ol style="list-style-type: none">1. Know about urban transportation system planning process, land use planning, different urban mass transit systems-their merits and limitations, different types of transportation surveys, travel demand modeling, urban mass transit system operation and urban goods movement.2. Carry out trip generation, trip distribution, modal split and trip assignment analysis.3. Develop and calibrate trip generation rates for specific types of land use developments.4. Learn the federal legislation and planning regulations pertaining to transportation planning issues5. Understated selected emerging contemporary transportation issues and their impact on the society
FEB170105	Project-I	<ol style="list-style-type: none">1. Apply the theoretical knowledge to solve industrial/social problem.2. Understand, analyze and solve Medium/Large scale engineering field problems3. Demonstrate teamwork and leadership qualities4. Design a solution with sustainability and professional ethical conduct as per field expectations.



Course Code	Course Name	Course Outcome
Course Outcomes Semester -VIII		
FEB180101	Construction Management & Equipment	<ol style="list-style-type: none">1. Execute all type of managerial tasks in construction projects.2. Use software for construction projects management.3. Student can demonstrate an ability to develop the various components of project controls including planning, scheduling, cost and resource management4. Students will be able to demonstrate planning, scheduling and monitoring of projects using professional software.5. Derive evaluation criteria and attributes for Construction Projects
FEB180102	Structural Design -II	<ol style="list-style-type: none">1. Understand various design philosophy to be used in the design of structural elements.2. Assess loads, prepare layout, analyze, design and detail of various structural elements for RC framed structure up to G+3.3. Design & detail RC structures like Retaining Wall, Water Tank and Flat slab.4. Prepare structural layout of Industrial steel structures, plate girder, foot-over Bridge.5. Determine the loads acting on it and identify the typical failure modes.6. Apply the principles, procedures and current Indian codal provisions to the analysis and design of Industrial structures, plate girder & foot-over bridges.7. Apply the principles of plastic design in steel beams & portal frames.
FEB180103	Dock Harbour And Airport Engineering	<ol style="list-style-type: none">1. To understand the various elements of Harbour and Airport2. To understand the fundamentals of planning and design of various marine structures3. To make the students aware about the operations in Harbour4. To give knowledge of maintenance techniques at Harbour5. To understand the fundamentals of planning and design of Airport structures.6. To make students aware of design of runway and taxiways at Airport7. To make students aware of the operations at Airport



FEB180104	Irrigation Engineering	<ol style="list-style-type: none">1. Understand the irrigation methods and duty-delta relation for crops2. Calculate Net Irrigation Requirement (NIR), Field Irrigation Requirement (FIR) and Gross Irrigation Requirement (GIR)3. Calculate the pressure at key points of sheet piles and floor thickness for a weir/barrage using Khosla's theory4. Plot seepage line of earthen dam with corrections at entry and exit5. Calculate forces on gravity dams.
FEB180105	Project -II	<ol style="list-style-type: none">1. Demonstrate initiative and intellectual levels to comprehend the chosen topic.2. Search for technical information from various resources, such as the library,3. Formulate engineering problems and develop appropriate solution methods.4. Understand and demonstrate the required professionalism to influence the societal change.5. Write scientific report and present their research work in a precise and coherent manner



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B.E.

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Mechanical Engineering

Program Outcomes (PO)



For the implementation of an outcome-based education the first requirement is to develop an outcome based curriculum and incorporate an outcome-based assessment in the education system. By going through outcome-based assessments, evaluators will be able to evaluate whether the students have achieved the outlined standard, specific and measurable outcomes. With the proper incorporation of outcome-based education there will be a definite commitment to achieve a minimum standard for all learners without giving up at any level. At the end of the programme running with the aid of outcome-based education, a student will be able to arrive at the following outcomes:

- PO1 Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2 Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using principles of mathematics, natural sciences, and engineering sciences.
- PO3 Design / development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4 Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5 Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.



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- PO6** **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.
- PO7** **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8** **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9** **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10** **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11** **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12** **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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B.E.

Bachelor of Engineering (B.E.)

Mechanical Engineering

Program Specific Outcomes (PSO)



Mechanical Engineering Programme Students will be able to:

PSO-1 Apply their knowledge in the domain of engineering mechanics, thermal and fluid sciences to solve engineering problems utilizing advanced technology.

PSO-2 Successfully apply the principles of design, analysis and implementation of mechanical systems/processes which have been learned as a part of the curriculum.

PSO-3 Develop and implement new ideas on product design and development with the help of modern CAD/CAM tools, while ensuring best manufacturing practices



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Bachelor of Engineering (B.E.)

Mechanical Engineering

Course Outcomes (CO)



Students of all under graduate Bachelor degree programs at the time of graduation will be able to learn:

Course Outcomes Semester-I B.E.		
Subject with code		Course Outcome
Engineering mathematics-I FEB110001	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions.
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics.
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables.
	CO 4	Mathematics has the potential to understand the core Technological studies.
	CO 5	To compute the areas and volumes using multiple integral techniques.
	CO 6	To perform matrix computation in a comprehensive manner.
Elements of Mechanical Engineering FEB110202	CO 1	To understand the fundamentals of mechanical systems.
	CO 2	To understand and appreciate significance of mechanical engineering in different fields of engineering.
	CO 3	Enhancement of fundamental knowledge of Thermodynamics.
	CO 4	Enhancement of fundamental knowledge of Fluid Mechanics and I.C. Engines.
	CO 5	Acquiring knowledge of materials and their properties for engineering applications.
	CO 6	Evaluate properties of steam. Demonstrate various types of boilers and their relative merits and demerits. Learning problem solving in particular domain.
Communication Skill FEB110003	CO 1	Understand the basics of communication and its significance to the career as an engineer.
	CO 2	Comprehend and express any idea/thought in an effective manner using the four basic communication skills: Listening, Reading, Speaking, and Writing (LSRW).
	CO 3	Make effective presentation, face job interview and participate in group communication fruitfully.
	CO 4	Handle various professional communication situations



		more impressively and effectively.
	CO 5	The student will acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills.
Elements of Electrical Engineering FEB110304	CO 1	Understand electrical current, potential difference, power and energy, sources of electrical energy, resistance and its behavior with temperature.
	CO 2	Use the Ohm's Law and the Kirchoff's Law and star delta transformation for solving resistive series, parallel and series-parallel circuits.
	CO 3	Define Electric field, lines of force, electric field intensity, electric flux, flux density and permittivity. Capacitor, charging and discharging phenomena of capacitors and calculations of capacitance for capacitors connected in series and parallel circuits.
	CO 4	Understand Concepts of Real power, Reactive power, apparent power and Power factor and perform calculations of these quantities for series and parallel R-L-C circuits.
	CO 5	Understand the importance of safety and the precaution to be taken while working with electrical equipment and accessories. Understand the working principle, usage and construction of circuit protection devices such as fuse, MCB, ELCB & Relays.
Physics FEB110006	CO 1	Able to understand, necessary parameters of different materials in different domains.
	CO 2	Demonstrate the behavior of material in different fields based on their properties.
	CO 3	Enhance practical capability and skills for modules using different materials and selection of material for system designs.
	CO 4	The student will demonstrate understanding of basic theory, properties and applications of Superconductivity
	CO 5	The student will demonstrate understanding the basic principles, properties and applications of associated with Waves, Motion and Acoustics.
	CO 6	The student will demonstrate understanding of basic principles, properties, type and application Lasers.
Basic Workshop FEB110206	CO 1	To acquire skills in basic engineering practice.
	CO 2	To acquire practical skills in the trades.



	CO 3	Understand modern manufacturing operations, including their capabilities, limitations, and how to design economically.
	CO 4	Welding and soldering operations.
	CO 5	Identify and apply suitable tools for machining processes including turning, facing, thread cutting and tapping.

Course Outcomes Semester-II B.E.		
Subject with code		Course Outcome
Engineering Mathematics-II FEB120001	CO 1	To apply mathematical tools needed in evaluating vector calculus and their usage like Work, Circulation and Flux.
	CO 2	To apply the Laplace transform as tools which are used to solve differential equations and Fourier integral representation.
	CO 3	To apply effective mathematical tools for the solutions of first order ordinary differential equations.
	CO 4	To apply effective mathematical methods for the solutions of higher order ordinary differential equations.
	CO 5	To implement the solution for engineering problem.
	CO 6	To use series solution methods and special functions like Bessel's' functions.
Elements of Civil Engineering FEB120102	CO 1	Carry out simple land survey to prepare maps with existing details.
	CO 2	Find out area of irregular shaped plane figures.
	CO 3	Understand building plan elevation and section.
	CO 4	Get acquainted with construction materials.
	CO 5	Get acquainted with hydrological cycle and hydraulic structures.
	CO 6	Get acquainted with mass transportation systems.
Computer Programming with C FEB120403	CO 1	Understand the fundamentals and structure of a C programming language.
	CO 2	Apply the loops, arrays, functions and string concepts in C to solve the given problem.
	CO 3	Apply the pointers and text input output files concept to find the solution for the given applications.
	CO 4	Use the Enumerated, Data types, Structures and Unions.
Engineering Graphics FEB120204	CO 1	To know and understand the conventions and the method of engineering drawing.
	CO 2	Identify the Drawing Symbols, Conventions used in Engineering Drawing.
	CO 3	Construct the Different types of Engineering Curves.



	CO 4	To improve their visualization skills so that they can apply these skill in developing new products.
	CO 5	Apply Descriptive Geometry Principles to Solve Engineering Problems Involving Points, Lines, Planes and Solids.
	CO 6	To improve their technical communication skill in the form of communicative drawings.
Environmental Science FEB120105	CO 1	Identify the types of pollution in society along with their sources and have idea how to deal with them.
	CO 2	Realize the global environmental issues.
	CO 3	Conceptualize the principles of Green Buildings and Smart cities.
	CO 4	Implement the concept of recycle and reuse in all fields of engineering.
	CO 5	Student will understand Ecology and Ecosystem of nature.

Course Outcomes Semester-III B.E.		
Subject with code		Course Outcome
Effective Technical Communication FEB130001	CO 1	Define and discuss dynamics of Verbal and Non-Verbal aspects of Communication.
	CO 2	Write various formal documents of technical and professional communication.
	CO 3	Communicate in diverse formal situations taking place in organizations.
	CO 4	Illustrate and examine the knowledge of ethical aspects of engineering.
	CO 5	Demonstrate and explain social and professional etiquettes.
	CO 6	Plan self-development and practice self-assessment.
Indian Constitution FEB130002	CO 1	Enhance human values, create awareness about law enactment and importance of Constitution.
	CO 2	To Understand the Fundamental Rights and Fundamental Duties of the Indian Citizen to instill morality, social values, honesty, dignity of life and their social Responsibilities.
	CO 3	Create Awareness of their Surroundings, Society, Social problems and their suitable solutions while keeping rights and duties of the citizen keeping in mind.
	CO 4	Understand distribution of powers and functions of Local Self Government.
	CO 5	Understand the National Emergency, Financial Emergency And their impact on Economy of the country.



Engineering Mathematics-III FEB130201	CO 1	Convert complex number in a polar form, plot the roots of a complex number in complex plane, find harmonic conjugate of analytic functions and apply conformal mapping in geometrical transformation.
	CO 2	Evaluate complex integration by using various result, test convergence of complex sequence and series and expand some analytic function in Taylor's series.
	CO 3	Find Laurent's series and pole of order, and apply Cauchy Residue theorem in evaluating some real integrals.
	CO 4	Understand the terminologies of basic probability, two types of random variables and their probability functions.
	CO 5	Observe and analyze the behavior of various discrete and continuous probability distributions.
	CO 6	Understand the fitting of various curves by method of least Square.
Manufacturing Process-I FEB130202	CO 1	Understand the basic concept of machining operations
	CO 2	Analyze any conventional machining processes.
	CO 3	Generate the sequence of machining operation to produce the end product.
	CO 4	Judge the limitations and scope of machines to perform variety of operations.
	CO 5	The student will be able to recommend the appropriate design of casting process systems, forming processes, welding process and machining (metal cutting) processes.
	CO 6	The student will be able to identify/control the appropriate process parameters, and possible defects of manufacturing processes so as to remove them.
Mechanical Measurement & Metrology FEB130203	CO 1	Students will describe basic concepts of Metrology.
	CO 2	Students will select linear measuring instrument for measurement of various components.
	CO 3	Students select angular and taper measurement devices for measurement of various components.
	CO 4	Students will discriminate between various screws by measuring their dimensions.
	CO 5	Students will separate different gears through measurement of various dimensions of gears.
Engineering Thermodynamics FEB130204	CO 1	Analyze the work and heat interactions associated with a prescribed process path.
	CO 2	Criticize a different operations on steady flow energy equation.
	CO 3	Define the fundamentals of the first and second laws of thermodynamics and explain their significance to a wide range of systems.



	CO 4	Evaluate entropy changes in a wide range of processes and determine the reversibility or irreversibility of a process from such calculations.
Engineering Mechanics FEB130205	CO 1	Understand and apply the fundamental principles of statics and dynamics to solve engineering problems
	CO 2	Apply Newton's laws of motion to analyses and solve problems related to particle and rigid body dynamics.
	CO 3	Analyze and calculate forces in simple structures and machines using principles of equilibrium and compatibility.
	CO 4	Analyze motion in terms of kinematics and kinetics, considering forces and accelerations.
	CO 5	Analyze problems involving frictional forces and understand their impact on equilibrium and motion.
	CO 6	Determine centroids and centers of mass for various shapes and apply these concepts to analyze distributed forces.

Course Outcomes Semester-IV B.E.		
Subject with code		Course Outcome
Essence of Indian Knowledge Tradition FEB140001	CO 1	Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective.
	CO 2	Identify the concept of Traditional knowledge and its importance.
	CO 3	Explain the need and importance of protecting traditional knowledge.
	CO 4	Illustrate the various enactments related to the protection of traditional knowledge.
	CO 5	Interpret the concepts of Intellectual property to protect the traditional knowledge.
	CO 6	Explain the importance of Traditional knowledge in Agriculture and Medicine.
Applied Thermodynamics FEB140201	CO 1	Good understanding of various practical power cycles and heat pump cycles.
	CO 2	They will be able to analyze energy conversion in various thermal devices such as combustors, air coolers, nozzles, diffusers, steam turbines and reciprocating compressors.
	CO 3	Understand power producing cycles and refrigeration cycles with vapour and air as fluids.
	CO 4	Understand different processes in IC Engines, calculate BP, IP, FP and prepare Heat Balance Sheet.



	CO 5	Understand different laws governing gases and their mixtures.
Fluid Mechanics and Fluid Machines FEB140202	CO 1	Understand the basic concept of fluid and properties of fluid.
	CO 2	Analyze the basic concepts of fluid-statics, kinematics and dynamics with their applications.
	CO 3	Understand and the implementation of continuity equation, discharge of flow in major and minor losses through pipes and to learn the hydraulic gradient energy.
	CO 4	Implement the fluid concept in viscous and turbulent flow.
	CO 5	Analyze and evaluate the performance of pumps and turbine.
Instrumentation & Control FEB140203	CO 1	Identify and choose suitable sensor for Velocity, Speed, Vibration and Acceleration measurement.
	CO 2	Classify and Demonstrate torque/force sensors and transducers.
	CO 3	Make use of instrument with appropriate specifications and design of extension of range instrument.
	CO 4	Design of hydraulic and pneumatic circuit for speed control of single or double acting cylinders.
	CO 5	Design of PID controller by direct synthesis and internal model control methods of model based techniques.
Materials Engineering FEB140204	CO 1	To be able to study the various symmetry elements in the seven basic crystal systems.
	CO 2	To be able to study the crystal structures of some materials metals, Ionic compounds and covalent compounds with the help of plastic models.
	CO 3	To be able to study the cooling curves of a given alloy.
	CO 4	To be able to study the micro-structure of various alloys using image analysis system.
	CO 5	To be able to study the effect of heat treatment on cast iron and carbon steels.
	CO 6	To able to study various types of cubic unit cells and Bravais lattices with the help of plastic models.
Strength of Materials FEB140205	CO 1	Understand the fundamental concepts related to stress, strain, and material properties such as stress, strain, modulus of elasticity, and Poisson's ratio.
	CO 2	Analyze and calculate normal stress and strain in structural elements subjected to axial loading.
	CO 3	Calculate shear stress and angle of twist in circular shafts subjected to torsional loading.
	CO 4	Analyze and calculate bending stress, shear stress, and deflection in beams subjected to various loading



		conditions.
	CO 5	Use Mohr's circle to analyses and represent two-dimensional stress and strain states.
	CO 6	Understand fatigue and fracture mechanics, including the S-N curve and factors influencing material failure under cyclic loading.

Course Outcomes Semester-V B.E.		
Subject with code		Course Outcome
Engineering Economics and Management FEB150001	CO 1	The course is intended to provide basic understanding of Economics and Management to engineering students with following aspects: To impart knowledge, with respect to concepts, principles and practical applications of Economics.
	CO 2	Which govern the functioning of a firm/organization under different market conditions. To help the students to understand the fundamental concepts and principles of management.
	CO 3	Basic roles, skills, functions of management, various organizational structures and basic knowledge of marketing.
	CO 4	Understand major principles of economic analysis for decision making among alternative courses of action in engineering.
	CO 5	Apply cost estimation and alternative analysis techniques for engineering applications.
	CO 6	Understand techniques and methods of sensitivity analysis and expected-value decisions.
Heat Transfer FEB150201	CO 1	Explain the basic modes and laws of heat transfer.
	CO 2	Develop and analyze general conduction equation in Cartesian, cylindrical and spherical coordinates.
	CO 3	Illustrate the concept of free and forced convection and discuss the dimensional analysis.
	CO 4	Classify the concept of boundary layer and develop the related equations.
	CO 5	Summarize the laws of thermal radiation and the concept of black body.
	CO 6	Explain the types of heat exchangers and discuss LMTD and NTU approaches for the design of heat exchangers.
Theory of Machine FEB150202	CO 1	Illustrate the student conversant with commonly used mechanism for industrial application.
	CO 2	Analyze the velocity and acceleration of a mechanisms



		analytically and synthesis of problems.
	CO 3	Construct the cam profile and analyze effect of friction in different mechanisms.
	CO 4	Determine the static and dynamic forces for mechanical systems and flywheels.
	CO 5	Design of belt and chain drive system.
	CO 6	Design CAM/ Follower mechanisms for a given motion or a given input/output motion or force relationship.
Manufacturing Process-II FEB150203	CO 1	Analyze and access the use of casting processes in manufacturing and understand the working of various casting processes.
	CO 2	Understand the basics of metal cutting and working of different types of machine tools.
	CO 3	Analyze and access the importance of welding processes in manufacturing and apply knowledge to select appropriate welding process based on the type of industrial application.
	CO 4	Analyze the Welding processes for varied engineering applications.
	CO 5	To select and apply knowledge, techniques, skills, and modern tools of the Welding Processes.
	CO 6	Explain the conventional and advanced metal forming processes and composite fabrication.
Mechanical Engineering Laboratory (Thermal) I FEB150204	CO 1	Upon completion of this course, students will be able to mathematically analyse the simple flow situation.
	CO 2	They will be able to evaluate the performance of pumps and turbines.
	CO 3	Understand statics, dynamics and various approaches to fluid mechanics.
	CO 4	Understand fundamentals of flow through pipes.
	CO 5	Understand basics of compressible flow.
	CO 6	Correlate fundamentals of fluid mechanics with various mechanical systems.
Project-I FEB150205	CO 1	Demonstrate a sound technical knowledge of their selected project topic.
	CO 2	Undertake problem identification, formulation and solution.
	CO 3	Design engineering solutions to complex problems utilizing a systems approach
	CO 4	Conduct an engineering project.
	CO 5	Communicate with engineers and the community at large in written an oral forms.



	CO 6	Demonstrate the knowledge, skills and attitudes of a professional engineer.
Design of Machine Elements FEB150206	CO 1	Explain the design procedures and methods, properties of engineering materials and their selection, design against static and fluctuating load.
	CO 2	Solve the design problems of different types of joints i.e. bolted, riveted joint and welded joint under different loading conditions.
	CO 3	Analyze the design problems related to the design of springs under different loading conditions.
	CO 4	Analyze the transmission shafts and keys under different loading conditions.
	CO 5	Design problems related to clutches, brakes and selection of bearings from manufacturer's catalogue.
	CO 6	Design gears and gearboxes, considering factors such as tooth profile, pitch, and power transmission requirements.

Course Outcomes Semester-VI B.E.		
Subject with code		Course Outcome
Cyber Security FEB160001	CO 1	Analyze and evaluate the cyber security needs of an organization.
	CO 2	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.
	CO 3	Measure the performance and troubleshoot cyber security systems.
	CO 4	Design and develop a security architecture for an organization.
	CO 5	Design operational and strategic cyber security strategies and policies.
	CO 6	Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators.
Dynamics of Machine FEB160201	CO 1	Learn methods for balancing rotating masses to minimize vibrations and improve the performance and durability of machines.
	CO 2	Study the dynamics of reciprocating engines, including the analysis of inertia forces, balancing, and vibration.
	CO 3	Develop skills in the dynamic analysis of machines, considering forces, moments, and their effects on machine components.
	CO 4	Understand the fundamentals of mechanical vibrations.
	CO 5	Ability to apply different methods for formulating the



		equation of motion for free and damped vibratory system and their solution cases.
	CO 6	Understand the different modes of vibrations and applications of numerical methods.
Advanced Manufacturing Processes FEB160202	CO 1	Have a strong background in manufacturing processes and materials for discreet piece part manufacture, considering nomenclature recognition, limits, costs, benefits, etc. of comparative processes and materials through a hand on approach.
	CO 2	Have an ability to utilize modern tools and techniques to effectively communicate technical requirements and functionality in oral, written, and graphical forms.
	CO 3	Students able to understand different forces acting while metal cutting and can draw merchant circle diagram and also able to apply knowledge to economic metal cutting.
	CO 4	Students can able to grasp distinctive knowledge of gear forming and its generating methods.
	CO 5	To understand high speed machining and its characteristics.
	CO 6	To impart knowledge on process parameters for nonconventional and micromachining.
Mechanical Engineering Laboratory (Design) II FEB160203	CO 1	To be able to understand fundamentals of design including material selection and axial retainment of rotating parts
	CO 2	To be able to design various joints, screwed connections, shafts, keys and couplings.
	CO 3	To develop understanding of stress concentration and fatigue and apply the same.
	CO 4	To be able to design levers, belt drives, pulleys, flywheels and hoisting machine elements.
	CO 5	To develop an ability to design brakes and clutches.
Computer Aided Design FEB160204	CO 1	Understand the basics of CAD/CAM, CIM and Computer Aided Quality Control.
	CO 2	Construct model of different types of curves, surfaces and solids.
	CO 3	Understand the concept of group technology, transformation of points and lines in computer aided software.
	CO 4	Understand and implement the coding.
	CO 5	Apply computer aided process planning.
Composite Materials FEB160205	CO 1	Explain the advantages and applications of composite materials.
	CO 2	Describe the properties of various reinforcements of



		composite materials.
	CO 3	Summarize the manufacture of metal matrix, ceramic matrix and C-C composite.
	CO 4	Describe the manufacture of polymer matrix composites.
	CO 5	Formulate the failure theories of composite materials.
Total Quality Management FEB160206	CO 1	Understand the historical development of quality management principles.
	CO 2	Knowledge of industry-specific quality standards and regulations.
	CO 3	Ability to apply these tools to analyze and improve processes.
	CO 4	Understand how quality aligns with organizational strategy and goals.
	CO 5	Recognize the ethical considerations in quality management.
Energy Conservation Management FEB160207	CO 1	Understand energy scenario and policy.
	CO 2	Understand the significance and procedure for energy conservation and audit.
	CO 3	Understand causes and remedies for global energy issues.
	CO 4	Analyze, calculate and improve the energy efficiency and performance of electrical utilities.
	CO 5	Analyze, calculate and improve the energy efficiency and performance of mechanical utilities.
Project-II FEB160208	CO 1	Understand the design thinking process.
	CO 2	Design a solution to an engineering problem.
	CO 3	Identify needs and constraints of product development system.
	CO 4	Create a prototype model.
	CO 5	Evaluate the designed solution.
	CO 6	Make economic decision for solution.

Course Outcomes Semester-VII B.E.		
Subject with code		Course Outcome
Industrial Engineering FEB170201	CO 1	Understand the concept of production system, productivity, facility and process planning in various industries.
	CO 2	Apply the various forecasting and project management techniques.
	CO 3	Apply the concept of breakeven analysis, inventory control and resource.



	CO 4	Apply principles of work study and ergonomics for design of work systems.
	CO 5	Formulate mathematical models for optimal solution of industrial problems using linear programming approach.
	CO 6	Analyze the effect of various performing parameters on industry.
Automation Manufacturing FEB170202	CO 1	Explain the role of automation in manufacturing and robotics industry.
	CO 2	Describe the group technology and flexible manufacturing techniques in the automated production line and manufacturing system.
	CO 3	Understand the computer aided process planning and shop floor manufacturing activities.
	CO 4	Develop CNC programs and apply in industry for manufacturing.
	CO 5	Understand the concept automated guided vehicle and automated storage system in material handling.
Mechanical Engineering Laboratory (Manufacturing) III FEB170203	CO 1	Upon completion of this course, the students can able to apply the different metal removing, finishing and super finishing and for component production.
	CO 2	Learn various cutting tool operations using CNC machines.
	CO 3	Upon completion of this course, the students can able to understand and compare the functions and applications of different metal cutting tools.
	CO 4	Upon completion of this course, the students can able to understand and compare the process.
Internal Combustion Engine FEB170204	CO 1	Introduction to heat engines and understand various cycles of operations of Internal combustion engines.
	CO 2	Discuss the mixture requirement and fuel injection system in IC engines.
	CO 3	Understand the concept of knocking and fuel ignition system in various engines.
	CO 4	Describe the lubrication system of engine and evaluate its performance parameters.
	CO 5	Analyze the current scenario on the pollution and illustrate methods of emission control.
Process Planning and Cost Estimation FEB170205	CO 1	Associate the knowledge of engineering fundamentals for process planning.
	CO 2	Distinguish various process planning activities.
	CO 3	Discuss the various elements involved in costing.
	CO 4	Estimate the product cost of job done by various manufacturing methods.



	CO 5	Estimate the Machining time for various operations carried out in different machines.
	CO 6	Apply the concept of Process planning and cost estimation for various production process.
Refrigeration & Air Conditioning FEB170206	CO 1	Understand the concept of different refrigeration processes.
	CO 2	Learn about refrigerants, their properties and evaluate the COP of VCR and VAR systems.
	CO 3	Understand the basics of Psychometry and its implementation in air conditioning systems.
	CO 4	Understand of standards for human comforts.
	CO 5	Implement the knowledge of air conditioning systems in different heating load calculations.
Finite Element Analysis FEB170207	CO 1	Summarize the basics of finite element formulation.
	CO 2	Apply finite element formulations to solve one dimensional Problems.
	CO 3	Apply finite element formulations to solve two dimensional scalar Problems.
	CO 4	Apply finite element method to solve two dimensional Vector problems.
	CO 5	Apply finite element method to solve problems on iso parametric element and dynamic Problems.
Project-III FEB170208	CO 1	Identify an open ended problem in area of mechanical engineering which requires further investigation.
	CO 2	Identify the methods and materials required for the project work.
	CO 3	Manage the work with team members.
	CO 4	Formulate and implement innovative ideas for social and environmental benefits.
	CO 5	Analyse the results to come out with concrete solutions.
	CO 6	Write technical report of the project apart from developing a presentation.

Course Outcomes Semester-VIII B.E.		
Subject with code		Course Outcome
Operation Research FEB180201	CO 1	Formulate, solve and optimize real-world problems using linear programming model (LPP).
	CO 2	Solve specialized linear programming problems using transportation and assignment model.
	CO 3	Analyse and evaluate game and sequencing theory with the help of practical problems.



	CO 4	Formulate stochastic inventory models and compute with the help of various simulation models for important performance measures.
	CO 5	Analyse and compare PPC techniques such as PERT and CPM. Discuss different waiting line models for solving queuing problems.
	CO 6	Perform hands-on experiments and computations relevant to industrial management.
Industrial Safety and Maintenance Engineering FEB180202	CO 1	To ensure the desired plant availability at an optimum cost within the safety prescription.
	CO 2	Student able to know about the objectives of maintenance.
	CO 3	To minimize the total cost of unavailability and resources.
	CO 4	Explain the repair methods of beds and slide ways.
	CO 5	Discuss various condition monitoring techniques.
	CO 6	Basic probability axioms and rules and the moments of discrete and continuous random variables.
Automobile Engineering FEB180203	CO 1	Understand the working of common automobile component, single and multi-cylinder engines, valve operating and fuel injection systems.
	CO 2	Understand the working principles of clutches and their types.
	CO 3	Understand the working principles of gearbox and their types.
	CO 4	Understand the working principles of propeller shaft, differential and their types.
	CO 5	Understand the working principles of brakes and their types.
Principle of Management FEB180204	CO 1	Understanding of management functions in an organization.
	CO 2	Understand the fundamental concepts and principles of management; the basic roles, skills, functions of management various organizational structures.
	CO 3	Understand basic knowledge of marketing.
Power Plant Engineering FEB180205	CO 1	Know about the different energy sources and power generation.
	CO 2	Understand the concept of hydrology and details about the hydroelectric power plant.
	CO 3	Ability to analyse steam cycle and learn about different handling systems used in steam power generators.
	CO 4	Understand the environmental norms and standards in thermal power generation.
	CO 5	Learn about combined cycles for power generation and



		diesel engine power plants.
	CO 6	Understand the conceptual knowledge of nuclear energy, its resources and the economics of power generation.
Gas Dynamics and Jet Propulsion FEB180206	CO 1	Apply the thermodynamics concepts in relation to compressible flows and derive relationships between various compressible flow parameters.
	CO 2	Understanding of isentropic compressible flows in variable area ducts and apply in design of static components like nozzles and diffusers.
	CO 3	Solve for compressible flow characteristics with friction and heat transfer.
	CO 4	Develop relationship for shocks and determine their characteristics under various conditions.
	CO 5	Analyse the performance of aircraft and rocket propulsion engines.
Project-IV FEB180207	CO 1	To be able to conduct review of literature to arrive at selected advances topic for seminar.
	CO 2	To be able to summarise the concept of the chosen topic systematically after considerable study of the content from primary as well as secondary sources.
	CO 3	To be able to write and present a technical report with suitable conclusion as per international standards.
	CO 4	For a selected research topic, student manager will be able to compile relevant data, interpret & analyse it and test the hypotheses wherever applicable.
	CO 5	Based on the analysis and interpretation of the data collected, student manager will be able to arrive at logical conclusions and propose suitable recommendations on the research problem.
	CO 6	To be able to discuss and depend the outcome of the report in a seminar.



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(Gujarat Private State University Act 4 of 2018)

COURSE OUTCOME

FACULTY OF ENGINEERING



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Electrical Engineering

BE Electrical Engineering (BE)

Batch 2018-2023

Program Outcomes (PO)

Gokul Global University, Sidhpur



Program Outcomes (PO)

Engineering Graduates will be able to:

1. PO-1: - Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. PO-2: -Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. PO-3: -Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. PO-4: -Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. PO-5: -Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. PO-6: -The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. PO-7: -Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. PO-8: -Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. PO-9: -Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. PO-10: -Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. PO-11: -Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. PO-12: -Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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Electrical Engineering

BE Electrical Engineering (BE)

Batch 2018-2023

Program Specific Outcomes (PSO)

Gokul Global University, Sidhpur



PROGRAM SPECIFIC OUTCOMES

1. PSO1: - Have a strong academic foundation in science, mathematics and electrical engineering necessary for a successful career in industry/research/higher education and will understand the professional responsibility in the modern electrical power and energy related industry through a global and rigorous education.
2. PSO2: - Possesses technical competence in the fields of electrical engineering and allied disciplines and will succeed in implementing engineering solutions that are technically sound and environmentally friendly.



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UNIVERSITY**

Approved By Govt. of Gujarat
(Recognized by UGC under Section 22 & 21) of 1956)
(Gujarat Private State University Act 4 of 2018)

Electrical Engineering

BE Electrical Engineering (BE)

Batch 2018-2023

Course Outcomes (CO)

Gokul Global University, Sidhpur



Course Outcome Semester-I BE Electrical		
Subject with code		Course Outcome
Engineering Mathematics-I (FEB110001)	CO1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions.
	CO2	To apply the various tests of convergence to sequence, series and the tool of power series and fourier series for learning advanced Engineering Mathematics
	CO3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables
	CO4	Mathematics has the potential to understand the core Technological studies
	CO5	To compute the areas and volumes using multiple integral techniques
	CO6	To perform matrix computation in a comprehensive manner
Elements Of Mechanical Engineering (FEB110202)	CO1	To understand the fundamentals of mechanical systems
	CO2	To understand and appreciate significance of mechanical engineering in different fields of engineering
	CO3	Enhancement of fundamental knowledge of Thermodynamics
	CO4	Enhancement of fundamental knowledge of Fluid Mechanics and I.C. Engines
	CO5	Acquiring knowledge of materials and their properties for engineering applications
	CO6	Evaluate properties of steam. Demonstrate various types of boilers and their relative merits and demerits. Learning problem solving in particular domain.
Communication skill (FEB110003)	CO1	Understand the basics of communication and its significance to the career as an engineer.
	CO2	Comprehend and express any idea/thought in an effective manner using the four basic communication skills: Listening, Reading, Speaking, Writing (LSRW).
	CO3	Make effective presentation, face job interview and participate in group communication fruitfully
	CO4	Handle various professional communication situations more impressively and effectively
	CO5	The student will acquire basic proficiency in English including reading and listening comprehension, writing



		and speaking skills.
Element of Electrical Engineering (FEB110304)	CO1	Understand electrical current, potential difference, power and energy, sources of electrical energy, resistance and its behavior with temperature
	CO2	Use the Ohm's Law and the Kirchoff's Law and star delta transformation for solving resistive series, parallel and series-parallel circuits
	CO3	Define Electric field, lines of force, electric field intensity, electric flux, flux density and permittivity. Capacitor, charging and discharging phenomena of capacitors and calculations of capacitance for capacitors connected in series and parallel circuits
	CO4	Understand Concepts of Real power, Reactive power, apparent power and Power factor and perform calculations of these quantities for series and parallel R-L-C circuits.
	CO5	Understand the importance of safety and the precaution to be taken while working with electrical equipment and accessories. Understand the working principle, usage and construction of circuit protection devices such as fuse, MCB, ELCB & Relays
Physics (FEB110005)	CO1	The student will demonstrate the ability to think in core concept of their engineering application studying various topics involved in branch specific applications.
	CO2	The student will demonstrate understanding of basic theory, properties and applications of Superconductivity
	CO3	The student will gain knowledge of basic theoretical and mathematical concept of electronic materials
	CO4	The student will demonstrate understanding of basic principles, properties and applications associated with semiconducting materials
	CO5	The student will demonstrate understanding of basic theory and properties associated with optoelectronic materials
	CO6	The student will demonstrate understanding of basic principles, properties, type and application Lasers
Basic Workshop (FEB110206)	CO1	The course is intended to provide basic understanding of Economics and Management to engineering students with following aspects: To impart knowledge, with respect to concepts, principles and practical applications of Economics,
	CO2	Which govern the functioning of a firm/organization under different market conditions. To help the students



		to understand the fundamental concepts and principles of management
	CO3	Basic roles, skills, functions of management, various organizational structures and basic knowledge of marketing
	CO4	Understand major principles of economic analysis for decision making among alternative courses of action in engineering.
	CO5	Apply cost estimation and alternative analysis techniques for engineering applications.
Course Outcome Semester-II BE Electrical		
Subject with code		Course Outcome
Engineering Mathematics – II (FEB120001)	CO1	To apply mathematical tools needed in evaluating vector calculus and their usage like Work, Circulation and Flux
	CO2	To apply the Laplace, transform as tools which are used to solve differential equations and Fourier Integral representation
	CO3	To apply effective mathematical tools for the solutions of first order ordinary differential Equations
	CO4	To apply effective mathematical methods for the solutions of higher order ordinary Differential equations
	CO5	To implement the solution for engineering problem
	CO6	To use series solution methods and special functions like Bessel's' functions
Basic Electronics (FEB120302)	CO1	Understand & apply fundamental electrical laws and circuit theorems to electrical circuits.
	CO2	Analyse single phase and three phase AC circuits.
	CO3	Design simple combinational and sequential functions using gates and flip-flops.
	CO4	Comprehend electrical installations, their protection and personnel safety.
	CO5	Explain the organization of computer systems and computer networks:
Computer Programming with C (FEB120403)	CO1	Understand the fundamentals and structure of a C programming language
	CO2	Apply the loops, arrays, functions and string concepts in C to solve the given problem
	CO3	Apply the pointers and text input output files concept to find the solution for the given applications.
	CO4	Use the Enumerated, Data types, Structures and Unions



Engineering Graphics (FEB120204)	CO1	To know and understand the conventions and the method of engineering drawing.
	CO2	Identify the Drawing Symbols, Conventions used in Engineering Drawing
	CO3	Construct the Different types of Engineering Curves.
	CO4	To improve their visualization skills so that they can apply this skill in developing new products.
	CO5	Apply Descriptive Geometry Principles to Solve Engineering Problems Involving Points, Lines, Planes and Solids
	CO6	To improve their technical communication skill in the form of communicative drawings
Environmental Science (FEB120105)	CO1	Identify the types of pollution in society along with their sources and have idea how to deal with them
	CO2	Realize the global environmental issues.
	CO3	Conceptualize the principles of Green Buildings and Smart cities.
	CO4	Implement the concept of recycle and reuse in all fields of engineering.
	CO5	Student will understand Ecology and Ecosystem of nature.
	CO6	Understand Renewable and Nonrenewable resources and how to use & save them.
Course Outcome Semester-III BE Electrical		
Subject with code		Course Outcome
Effective Technical Communication (FEB130001)	CO1	Define and discuss dynamics of Verbal and Non-Verbal aspects of Communication
	CO2	Write various formal documents of technical and professional communication.
	CO3	Communicate in diverse formal situations taking place in organizations.
	CO4	Illustrate and examine the knowledge of ethical aspects of engineering
	CO5	Demonstrate and explain social and professional etiquettes
	CO6	Plan self-development and practice self-assessment.
Indian Constitution (FEB130002)	CO1	Enhance human values, create awareness about law enactment and importance of Constitution
	CO2	To Understand the Fundamental Rights and Fundamental Duties of the Indian Citizen to instill morality, social values, honesty, dignity of life and their social Responsibilities.



	CO3	Create Awareness of their Surroundings, Society, Social problems and their suitable solutions while keeping rights and duties of the citizen keeping in mind.
	CO4	Understand distribution of powers and functions of Local Self Government
	CO5	Understand the National Emergency, Financial Emergency and their impact on Economy of the country
Engineering Mathematics – III (FEB130101)	CO1	solve algebraic equation related to electric engineering problem by using numerical methods and understand convergent of it
	CO2	find unknown value of given data by using various interpolation methods and curve fitting
	CO3	calculate integration and solve differential equations by using numerical methods
	CO4	understand the terminologies of basic probability and their probability functions and apply it in electrical problems
	CO5	understand the central tendency methods and apply it in electrical problems
	CO6	observe and analyze the behavior of various discrete and continuous probability
Electrical Circuit Analysis (FEB130302)	CO1	Apply the knowledge of basic circuit laws and simplify the dc and ac networks using reduction techniques.
	CO2	Analyse the dc and ac circuits using mesh and nodal analysis and network simplification theorems. Analyse the series and parallel resonant circuits
	CO3	Infer and evaluate transient response, steady state response of series, parallel and compound circuits.
	CO4	Develop Laplace transformed network for steady state and transient analysis.
	CO5	Analyse dc and ac circuits and time domain response using Advance Tools like MATLAB, PSIM, etc.
Analog & Digital Electronics (FEB130303)	CO1	Students will able to describe the functioning and selection of OP-AMP as per application.
	CO2	Students will able to design and testing of OP-AMP based circuits.
	CO3	Students will be able to design and implement Combinational and Sequential logic circuits.
	CO4	Students will be able describe the process of Analog to Digital conversion and Digital to Analog conversion.



	CO5	Understanding to characteristics of different Analog and digital electronic devices.
Control System Engineering (FEB130304)	CO1	Apply systems theory to complex real-world problems in order to obtain models that are expressed using differential equations, transfer functions, and state space equations.
	CO2	Predict system behavior based on the mathematical model of that system where the model may be expressed in time or frequency domain.
	CO3	Analyse the behavior of closed loop systems using tools such as root locus, Routh Hurwitz, Bode, Nyquist, and MATLAB
	CO4	Design controllers using classical PID methods, root locus methods, and frequency domain methods.
	CO5	Devise a safe and effective method of investigating a system identification problem in the lab.
Course Outcome Semester-IV BE Electrical		
Subject with code		Course Outcome
Essence Of Indian Knowledge Tradition (FEB140001)	CO1	Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective
	CO2	Identify the concept of Traditional knowledge and its importance
	CO3	Explain the need and importance of protecting traditional knowledge
	CO4	Illustrate the various enactments related to the protection of traditional knowledge.
	CO5	Interpret the concepts of Intellectual property to protect the traditional knowledge.
	CO6	Explain the importance of Traditional knowledge in Agriculture and Medicine.
Electrical Machine-I (FEB140301)	CO1	Understand working principle, performance, control and applications of DC Machines and Transformer
	CO2	Carry out test and conduct performance experiments on DC machine and Transformer
	CO3	To identify different part and function of DC machine and Transformer.
	CO4	To solve problems related to DC machine and Transformer
	CO5	Understand various tests to be performed on transformers and induction machines to evaluate their performances.



Electromagnetic Fields (FEB140302)	CO1	To differentiate different types of coordinate systems and use them for solving the problems of electromagnetic field theory
	CO2	To describe static electric and magnetic fields, their behaviour in different media, associated laws, boundary conditions and electromagnetic potentials
	CO3	To use integral and point form of Maxwell's equations for solving the problems of electromagnetic field theory.
	CO4	To describe time varying fields, propagation of electromagnetic waves in different media, pointing theorem, their sources & effects and to apply the theory of electromagnetic waves in practical problems.
	CO5	To apply concepts of Wave reflection and refraction, Smith Chart in practical Field.
Internet Of Things (FEB140303)	CO1	Understand the vision of IoT from a global context.
	CO2	Understand the application of IoT.
	CO3	Determine the Market perspective of IoT.
	CO4	Use of Devices, Gateways and Data Management in IoT.
	CO5	Introduce students to the concept of IoT, its evolution, and its impact on various industries and everyday life.
Power Plant Engineering (FEB140304)	CO1	Describe the working of thermal power station (TPS) using single line diagram and state the functions of the major equipment and auxiliaries of a TPS
	CO2	Explain hydro energy conversion process with block diagrams and identify the appropriate site for it.
	CO3	Explain the working of nuclear power station.
	CO4	Describe the working of Diesel power station and Gas turbine power plant.
	CO5	Discuss the working principle and basic components of the hydroelectric plants and the economic principles and safety precautions involved with it
Power Electronics-I (FEB140305)	CO1	Understand basic concept of power electronics.
	CO2	Study the operation and characteristics of power electronics devices.
	CO3	Understand basic principle and working of AC to DC converter, DC to DC converters, DC to AC converters and AC to AC converters.
	CO4	Apply the knowledge of power electronic converter for speed control of DC motors.
	CO5	Explore various applications of power electronics converters



Course Outcome Semester-V BE Electrical		
Subject with code		Course Outcome
Engineering Economics & Management (FEB150001)	CO1	The course is intended to provide basic understanding of Economics and Management to engineering students with following aspects: To impart knowledge, with respect to concepts, principles and practical applications of Economics. Which govern the functioning of a firm/organization under different market conditions.
	CO2	To help the students to understand the fundamental concepts and principles of management; the basic roles, skills, functions of management, various organizational structures and basic knowledge of marketing.
	CO3	Identify the characteristics of various methods used for the generation of financial management decisions
	CO4	Develop and analyze information on investment planning and cost controls, and conduct cost/benefit analysis.
	CO5	Quantify and include elements of uncertainty and risk into an economic analysis
Electrical Machines- II (FEB150301)	CO-1	Understand the construction, working principle, performance and applications of Poly-phase induction motor, single phase motors, synchronous generator (Alternator), synchronous motor and commutator motors.
	CO-2	Carry out test and conduct performance experiments on above machines.
	CO-3	To solve the numerical problems related to above machines.
	CO-4	Understand the Application of Poly-phase induction motor, single phase motors, synchronous generator (Alternator), synchronous motor and commutator motors.
	CO-5	Analyze and apply the concept of steady state analysis and electrical transients in polyphase machine
Power Electronics-II (FEB150302)	CO-1	Relate basic semiconductor physics to properties of power devices, and combine circuit mathematics and characteristics of linear and non- linear devices.
	CO-2	Describe basic operation and compare performance of various power semiconductor devices, passive components and switching circuits



	CO3	Design and Analyze power converter circuits and learn to select suitable power electronic devices by assessing the requirements of application fields.
	CO4	Formulate and analyze a power electronic design at the system level and assess the performance
	CO5	Identify the critical areas in application levels and derive typical alternative solutions, select suitable power converters to control Electrical Motors and other industry grade apparatus.
	CO6	Recognize the role power electronics play in the improvement of energy usage efficiency and the applications of power electronics in emerging areas.
Microprocessors (FEB150303)	CO1	List and specify the various features of microprocessor, memory and I/O devices including concepts of system bus.
	CO2	Identify the various elements of 8085 microprocessor architecture, its bus organization including control signals.
	CO3	Describe the 8085 processor addressing modes, instruction classification and function of each instruction and write the assembly language programs using 8085 instructions.
	CO4	Explain the concepts of memory and I/O interfacing with 8085 processor with Programmable devices.
	CO5	List and describe the features of advance microprocessors.
	CO6	Understand the real time application of microprocessors
Elements Of Electrical Design (FEB150304)	CO1	Explain the basic concepts related to design of electrical equipment.
	CO2	Understand the analysis of starters, field regulators, small transformers and choke coils.
	CO3	Design the starters, field regulators, small transformers and choke coils.
	CO4	Understand design expect of electrical installation
	CO5	Draw and explain the winding diagrams for AC and DC machines
Electrical Power System-I (FEB150305)	CO1	Ability to design and analyse the real time electrical transmission system with respect to various electrical parameters considering environmental and economic obligations
	CO2	Develop the ability to implement the appropriate safety equipment's for design of electrical power system with



		enhancing the efficiency of the transmission and distribution system with environment friendly technology.
	CO3	Ability to implement the knowledge of basic mathematical, physical and electrical principles to formulate significant electrical hazards.
	CO4	Perform power flow analysis to determine the steady-state operating conditions of a power system.
	CO5	Understand the fundamental concepts and principles of electrical power systems, including generation, transmission, and distribution.
Course Outcome Semester-VI BE Electrical		
Subject with code		Course Outcome
Electrical Power System-II (FEB160301)	CO1	Understand the basic principles of distribution systems.
	CO2	Describe the symmetrical components and its applications
	CO3	Analyse Symmetrical and Unsymmetrical faults in power systems
	CO4	Analyze different types of faults.
	CO5	Understand the basic principles of distribution systems
Electrical Measurements (FEB160302)	CO1	Understand the working principal and construction of the measuring instruments and recorders.
	CO2	Measure various electrical and physical quantities and parameters using meters and transducers
	CO3	Calibrate the measuring devices such as meters and transducers
	CO4	Develop the knowledge of theoretical and mathematical principles of electrical measuring instruments.
	CO5	Assess fault conditions in electrical installations and identify necessary remedial measures.
Electrical Drives (FEB160303)	CO1	Understand the basics of electric drives and fundamentals of drive dynamics.
	CO2	Learn and analyze DC drive.
	CO3	Learn and analyze different steady state speed control methods for Induction motors,
	CO4	Design and justify new control and power conversion schemes for implementing alternative solutions considering the critical and contemporary issues
	CO5	Identify the critical areas in application levels, and derive typical solutions
High Voltage Engineering	CO1	Understand the basic generation and measurement of



(FEB160304)		High voltage and High current for testing purposes
	CO2	Describe the principles behind generating high DC – AC and impulse voltages.
	CO3	Develop equivalent circuit models of the different high voltage generators
	CO4	Perform a dynamic response analysis of high voltage measurement systems.
	CO5	Transient voltages and their propagation characteristics
Electrical Machine Design-I (FEB160305)	CO1	Analyze and evaluate the cyber security needs of an organization.
	CO2	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.
	CO3	Measure the performance and troubleshoot cyber security systems
	CO4	Design and develop a security architecture for an organization.
	CO5	Design operational and strategic cyber security strategies and policies.
Cyber Security (FEB160001)	CO1	Understand the fundamentals and structure of a C programming language
	CO2	Apply the loops, arrays, functions and string concepts in C to solve the given problem
	CO3	Apply the pointers and text input output files concept to find the solution for the given applications.
	CO4	Use the Enumerated, Data types, Structures and Unions
Course Outcome Semester-VII BE Electrical		
Subject with code		Course Outcome
Electrical Machine Design-II (FEB170301)	CO1	Design the Induction and Synchronous machines of given specifications.
	CO2	Prepare the detailed sketches of the designed machine
	CO3	Understand the design of various parts of DC machines and solve the problems of design
	CO4	Understand the design concepts of transformers and know about how to design the parts.
	CO5	Understand the design concepts of synchronous machines and solve the problems related to design
Power System Protection (FEB170302)	CO1	Explain the purposes of protection, in relation to major types of apparatus.
	CO2	Identify the challenges and solutions to industrial power system protection problems
	CO3	Analyze and compare specified protection systems



		Compare merits of various principles
	CO4	Compare the different type of circuit breakers performance based on which selection of circuit breaker can be made for a given application.
	CO5	Analyze power system faults for balanced and unbalanced conditions
Signals & Systems (FEB170303)	CO1	Understand about various types of signals, classify them, analyze them, and perform various operations on them.
	CO2	Understand about various types of systems, classify them, analyze them and understand their response behaviour
	CO3	Appreciate use of transforms in analysis of signals and system
	CO4	Carry simulation on signals and systems for observing effects of applying various properties and operations.
	CO5	Understand and resolve the signals in frequency domain using Fourier series and Fourier.
Interconnected Power System (FEB170304)	CO1	Model modern power system network.
	CO2	Solve the problem of power flow through any power system network
	CO3	Optimal Ordering & Sparse Matrix Techniques
	CO4	Power Flow Methods, Available Transfer Capability.
	CO5	Fault Analysis – Two Bus Construction
Project- I (FEB170305)	CO1	Student manager will be able to choose an appropriate topic for study and will be able to clearly formulate & state a research problem.
	CO2	For a selected research topic, student manager will be able to compile the relevant literature and frame hypotheses for research as applicable.
	CO3	For a selected research topic, student manager will be able to plan a research design including the sampling, observational, statistical and operational designs if any.
	CO4	For a selected research topic, student manager will be able to compile relevant data, interpret analyze it and test the hypotheses wherever applicable.
	CO5	Based on the analysis and interpretation of the data collected, student manager will be able to arrive at logical conclusions and propose suitable recommendations on the research problem



Course Outcome Semester-VIII BE Electrical		
Subject with code		Course Outcome
Power Quality and Facts (FEB180301)	CO1	Understand the basics and breath of Electrical Engineering as a field.
	CO2	Explain the characteristics of ac transmission and the effect of shunt reactive compensation.
	CO3	Explain the characteristics of ac transmission and the effect of series reactive compensation.
	CO4	Describe the working principles of FACTS devices and their operating characteristics.
	CO5	Know the basic concepts of power quality
Industrial Instrumentation (FEB180302)	CO1	Understand the basics and breath of Electrical Engineering as a field.
	CO2	Select a transducer based on its operating characteristics for the required application.
	CO3	Check various available techniques available and select appropriate to obtain satisfactory task for the parameter to be measured
	CO4	Know advantages and limitations of selected techniques.
	CO5	Interpret the measurement results and cause of any possible error.
Computer Aided Design & Design for Electrical Engineering (FEB180303)	CO1	Understand the basics and breath of Electrical Engineering as a field.
	CO2	Explain the concepts related to computer aided design of electrical Induction motor.
	CO3	Explain the concepts related to computer aided design of electrical Transformer.
	CO4	Explain the concepts related to computer aided design of electrical synchronous motor.
	CO5	Explain the concepts related to computer aided design of electrical generator.
	CO6	Formulate and solve the optimum design problems with computers
Project- II (FEB180302)	CO1	student manager will be able to choose an appropriate topic for study and will be able to clearly formulate & state a research problem.
	CO2	For a selected research topic, student manager will be able to compile the relevant literature and frame hypotheses for research as applicable.
	CO3	For a selected research topic, student manager will be able to plan a research design including the sampling, observational, statistical and operational designs if any.



	CO4	For a selected research topic, student manager will be able to compile relevant data, interpret analyze it and test the hypotheses wherever applicable.
	CO5	Based on the analysis and interpretation of the data collected, student manager will be able to arrive at logical conclusions and propose suitable recommendations on the research problem



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COURSE OUTCOME

FACULTY OF ENGINEERING



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B.E.

Bachelor of Engineering (B.E.)

Computer Engineering

Program Outcomes (PO)



For the implementation of an outcome-based education the first requirement is to develop an outcome based curriculum and incorporate an outcome-based assessment in the education system. By going through outcome-based assessments, evaluators will be able to evaluate whether the students have achieved the outlined standard, specific and measurable outcomes. With the proper incorporation of outcome-based education there will be a definite commitment to achieve a minimum standard for all learners without giving up at any level. At the end of the programme running with the aid of outcome-based education, a student will be able to arrive at the following outcomes:

- PO1** **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2** **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using principles of mathematics, natural sciences, and engineering sciences.
- PO3** **Design / development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4** **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5** **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.



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- PO6** **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.
- PO7** **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8** **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9** **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10** **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11** **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12** **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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B.E.

Bachelor of Engineering (B.E.)

Computer Engineering

Program Specific Outcomes (PSO)



Computer Engineering Programme Students will be able to:

PSO- 1: Design and develop computer programs/computer-based systems in the areas related to algorithms, networking, web design, cloud computing, IoT and data analytics of varying complexity

PSO -2: Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems



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B.E.

Bachelor of Engineering (B.E.)

Computer Engineering

Course Outcomes (CO)



Students of all under graduate Bachelor degree programs at the time of graduation will be able to learn:

Course Outcomes Semester-I B.E.		
Subject with code		Course Outcome
FEB110001: Engineering Mathematics-I	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions.
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics.
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables.
	CO 4	Mathematics has the potential to understand the core Technological studies.
	CO 5	To compute the areas and volumes using multiple integral techniques.
	CO 6	To perform matrix computation in a comprehensive manner.
FEB110202: Elements Of Mechanical Engineering	CO 1	To understand the fundamentals of mechanical systems.
	CO 2	To understand and appreciate significance of mechanical engineering in different fields of engineering.
	CO 3	Enhancement of fundamental knowledge of Thermodynamics.
	CO 4	Enhancement of fundamental knowledge of Fluid Mechanics and I.C. Engines.
	CO 5	Acquiring knowledge of materials and their properties for engineering applications.
	CO 6	Evaluate properties of steam. Demonstrate various types of boilers and their relative merits and demerits. Learning problem solving in particular domain.
FEB110003: Communication Skill	CO 1	Use various forms of vocabulary in varied situations in oral and written communication.
	CO 2	Understand the phonetics and the transcription pattern to learn correct pronunciation
	CO 3	Comprehend the dynamics of various rules of



		grammar and check its validation while they speak and write language correctly.
	CO 4	Use grammar effectively to make themselves competent Listener, Speaker, Reader and Writer by exposing to various set of situations.
	CO 5	Write various formal and informal documents of day to day life and professional set up.
	CO 6	Demonstrate the qualities of writing in diverse situation by using the nuances such as conciseness, clarity, accuracy, organization, and coherence.
FEB110304: Elements of Electrical Engineering	CO 1	Understand electrical current, potential difference, power and energy, sources of electrical energy, resistance and its behavior with temperature.
	CO 2	Use the Ohm's Law and the Kirchhoff's Law and star delta transformation for solving resistive series, parallel and series-parallel circuits.
	CO 3	Define Electric field, lines of force, electric field intensity, electric flux, flux density and permittivity. Capacitor, charging and discharging phenomena of capacitors and calculations of capacitance for capacitors connected in series and parallel circuits.
	CO 4	Understand Concepts of Real power, Reactive power, apparent power and Power factor and perform calculations of these quantities for series and parallel R-L-C circuits.
	CO 5	Understand the importance of safety and the precaution to be taken while working with electrical equipment and accessories. Understand the working principle, usage and construction of circuit protection devices such as fuse, MCB, ELCB & Relays
	CO 6	Design simple analog signal processing functions using operational amplifiers.
FEB110005: Physics	CO 1	The student will demonstrate the ability to think in core concept of their engineering application by studying various topics involved in branch specific applications.
	CO 2	The student will demonstrate understanding of basic theory, properties and applications of Superconductivity.
	CO 3	The student will gain knowledge of basic theoretical and mathematical concept of electronic materials.
	CO 4	The student will demonstrate understanding of basic



		principles, properties and applications associated with semiconducting materials.
	CO 5	The student will demonstrate understanding of basic theory and properties associated with optoelectronic materials.
	CO 6	The student will demonstrate understanding of basic principles, properties, type and application Lasers
Course Outcomes Semester-II B.E.		
FEB110206: Basic Workshop	CO 1	To acquire skills in basic engineering practice
	CO 2	To acquire practical skills in the trades
	CO 3	Understand modern manufacturing operations, including their capabilities, limitations, and how to design economically.
	CO 4	Welding and soldering operations
	CO 5	Identify and apply suitable tools for machining processes including turning, facing, thread cutting and tapping
FEB120001:Engineering Mathematics – Ii	CO 1	To apply mathematical tools needed in evaluating vector calculus and their usage like Work, Circulation and Flux
	CO 2	To apply the Laplace transform as tools which are used to solve differential equations and Fourier integral representation
	CO 3	To apply effective mathematical tools for the solutions of first order ordinary differential equations
	CO 4	To apply effective mathematical methods for the solutions of higher order ordinary differential equations
	CO 5	To implement the solution for engineering problem
	CO 6	To use series solution methods and special functions like Bessels' functions
FEB120302: Basic Electronics	CO 1	Understand & apply fundamental electrical laws and circuit theorems to electrical circuits.
	CO 2	Analyze single phase and three phase AC circuits.
	CO 3	Design simple combinational and sequential functions using gates and flip-flops.
	CO 4	Comprehend electrical installations, their protection and personnel safety.
	CO 5	Explain the organization of computer systems and computer networks
FEB120403:Computer	CO 1	Understand the fundamentals and structure of a C



Programming With C		programming language
	CO 2	Apply the loops, arrays, functions and string concepts in C to solve the given problem
	CO 3	Apply the pointers and text input output files concept to find the solution for the given applications.
	CO 4	Use the Enumerated, Data types, Structures and Unions
FEB120204: Engineering Graphics	CO 1	To know and understand the conventions and the method of engineering drawing.
	CO 2	Identify the Drawing Symbols, Conventions used in Engineering Drawing
	CO 3	Construct the Different types of Engineering Curves.
	CO 4	To improve their visualization skills so that they can apply these skill in developing new products.
	CO 5	Apply Descriptive Geometry Principles to Solve Engineering Problems Involving Points, Lines, Planes and Solids
	CO 6	To improve their technical communication skill in the form of communicative drawings
FEB120105: Environmental Science	CO 1	Students are able to learn types of disasters and its profile in India
	CO 2	Students are able to understand the causes and impacts of disasters on environment and related case studies of Global and National disasters.
	CO 3	Students are able to learn about risk reduction approaches of disasters with safety issues in mitigating industrial disasters.
	CO 4	To understand the concept of Disaster Management Cycle and its Risk Reduction Measures
	CO 5	Students to learn the National Acts and policies for mitigating disasters, Role of Army, Police, Community, Corporate, Media etc. for post Disaster Management.
Course Outcomes Semester-III B.E.		
FEB130001:Effective Technical Communication	CO 1	Define and discuss dynamics of Verbal and Non-Verbal aspects of Communication.
	CO 2	Write various formal documents of technical and professional communication.
	CO 3	Communicate in diverse formal situations taking



		place in organizations.
	CO 4	Illustrate and examine the knowledge of ethical aspects of engineering.
	CO 5	Demonstrate and explain social and professional etiquettes.
	CO 6	Plan self-development and practice self-assessment.
FEB130002: Indian Constitution	CO 1	Explain the background of the present constitution of India and features.
	CO 2	Utilize the fundamental rights and duties.
	CO 3	Understand the working of the union executive, parliament and judiciary
	CO 4	Understand the working of the state executive, legislature and judiciary.
	CO 5	Utilize the special provisions and statutory institutions.
	CO 6	Show national and patriotic spirit as responsible citizens of the country
FEB130401: Engineering Mathematics-Iii	CO 1	understand the terminologies of basic probability, two types of random variables and their probability functions
	CO 2	observe and analyze the behavior of various discrete and continuous probability distributions
	CO 3	understand the central tendency, correlation and correlation coefficient and also regression
	CO 4	apply the statistics for testing the significance of the given large and small sample data by using t- test, F- test and Chi-square test
	CO 5	understand the fitting of various curves by method of least square
	CO 6	understand the central tendency methods and apply it in computer problems
FEB130402: Digital Electronics	CO 1	Explain about digital number systems and logic circuits
	CO 2	The student should be able to solve logic function minimization
	CO 3	The students should be able to differentiate between combinational and sequential circuits such as decoders, encoders, multiplexers, de-multiplexers, flip-flops, counters, registers.
	CO 4	They should be able to design using FSM
	CO 5	They should be able to start writing HDL codes for



		various digital circuits
	CO 6	At the end they should be able to develop a course project using digital integrated circuits
FEB130403: Object Oriented Programming With C++	CO 1	Learn the basics of learning problems with hypothesis and version spaces
	CO 2	Write the skeleton of C++ program
	CO 3	Write the simple C++ programs using the variables, operators, control structures, functions and I/O, objects, cin and cout.
	CO 4	Use features of C++ like type conversion, inheritance, polymorphism, I/O streams and files to develop programs for real life problems.
	CO 5	Use advance features like templates and exception to make programs supporting reusability and sophistication.
	CO 6	Use standard template library for faster development.
FEB130404: Data Structure & Algorithms	CO 1	Define data structures like array, stack, queues and linked list.
	CO 2	Explain insertion, deletion and traversing operations on data structures.
	CO 3	Identify the asymptotic notations to find the complexity of an algorithm.
	CO 4	Compare various searching and sorting techniques.
	CO 5	Choose appropriate data structure while designing the algorithms.
	CO 6	Design advance data structures using nonlinear data structures.
Course Outcomes Semester-IV B.E.		
FEB140001: Essence Of Indian Traditional Knowledge	CO 1	Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective
	CO 2	Identify the concept of Traditional knowledge and its importance.
	CO 3	Explain the need and importance of protecting traditional knowledge.
	CO 4	Illustrate the various enactments related to the protection of traditional knowledge.
	CO 5	Interpret the concepts of Intellectual property to protect the traditional knowledge.
	CO 6	Explain the importance of Traditional knowledge in Agriculture and Medicine.
FEB140401:	CO 1	Understand the basic principles of sets and



Discrete Mathematics		operations in sets and apply counting principles to determine probabilities, domain and range of a function, identify one-to- one functions, perform the composition of functions and apply the properties of functions to application problems.
	CO 2	Write an argument using logical notation and determine if the argument is or is not valid. To simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic. To express a logic sentence in terms of predicates, quantifiers, and logical connectives.
	CO 3	Apply relations and to determine their properties. Be familiar with recurrence relations
	CO 4	Use the properties of algebraic structures.
	CO 5	Interpret different traversal methods for trees and graphs. Model problems in Computer Science using graphs and trees.
	CO 6	understand the central tendency methods and apply it in computer problems
FEB140402: Computer Organization	CO 1	Identify, understand and apply different number systems and codes.(Understanding)
	CO 2	Identify, compare and assess to Bus and memory (Applying, Analyzing)
	CO 3	Identify and analyze basic organization of CPU (Analyzing)
	CO 4	Identify and learn the concept of memory hierarchy
	CO 5	Analyze and learn peripheral devices (Analyzing, Designing)
FEB140403: Operating System	CO 1	Students will describe basic concepts of Operating System
	CO 2	Describe the important computer system resources and the role of operating system in their management policies and algorithms
	CO 3	Understand the process management policies and scheduling of processes by CPU
	CO 4	Evaluate the requirement for process synchronization and coordination handled by operating system
	CO 5	Describe and analyze the memory management and its allocation policies.
	CO 6	Identify use and evaluate the storage management



		policies with respect to different storage management technologies
	CO 7	Identify the need to create the special purpose operating system.
FEB140404: Design & Analysis Of Algorithms	CO 1	Analyze the asymptotic performance of algorithms.
	CO 2	Derive and solve recurrences describing the performance of divide-and-conquer algorithms
	CO 3	Find optimal solution by applying various methods.
	CO 4	Apply pattern matching algorithms to find particular pattern.
	CO 5	Differentiate polynomial and non-polynomial problems.
	CO 6	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate
FEB140405: Database Management System	CO 1	Students will be able to know the need of Program Data Independence and DBMS technology as a backend database development in Application Software.
	CO 2	Students will be able to apply E-R Modelling to prepare E-R diagrams for database design. Formulate relational tables from E-R diagram and Relational modelling, populate relational database and formulate SQL queries on data.
	CO 3	Students will be able to identify the Functional Dependency in data and eliminate it with Normalization to improve database design.
	CO 4	Students will be able to learn Concurrency Control mechanism, Database Recovery methods with Transaction Theory.
	CO 5	Students will be able to apply the knowledge, techniques, models and modern tools to become successful database professionals in software industries.
Course Outcomes Semester-V B.E.		
FEB150001: Engineering Economics And Management	CO 1	The course is intended to provide basic understanding of Economics and Management to engineering students with following aspects: To impart knowledge, with respect to concepts, principles and practical applications of Economics
	CO 2	Which govern the functioning of a firm/organization under different market conditions. To help the students to understand the fundamental concepts



		and principles of management
	CO 3	basic roles, skills, functions of management, various organizational structures and basic knowledge of marketing
	CO 4	Understand major principles of economic analysis for decision making among alternative courses of action in engineering.
	CO 5	Apply cost estimation and alternative analysis techniques for engineering applications.
	CO 6	Understand techniques and methods of sensitivity analysis and expected-value decisions.
FEB150401: System Programming	CO 1	Understand different components of system software
	CO 2	Understand intermediate code generation in context of language designing
	CO 3	Recognize operating system functions such as memory management as pertaining to run time storage management.
	CO 4	To understand and implement Assembler, Loader, Linkers, Macros & Compilers
	CO 5	To introduce students the process management and information management via different software tools
	CO 6	To introduce student the fundamental model of the processing of high-level language programs for execution on computer system.
FEB150402: Object Oriented Programming With Java	CO 1	Use various Java constructs, features and libraries for simple problems.
	CO 2	Demonstrate how to define and use classes, inheritance, interfaces, create objects and methods, how to override and overload methods, compile and execute programs
	CO 3	Write a program using exception handling, multithreading with synchronization.
	CO 4	Write a program using Files, binary I/O, collection Frameworks for a give no problem
	CO 5	Design and develop GUI based applications in a group using modern tools and frameworks.
FEB150403: Micro Processor & Interfacing	CO 1	List and specify the various features of microprocessor, memory and I/O devices including concepts of system bus
	CO 2	Identify the various elements of 8085 microprocessor architecture, its bus organization



		including control signals
	CO 3	List the pin functions of the 8085 microprocessor
	CO 4	Describe different modes of operations of a typical microprocessor and microcontroller.
	CO 5	Interface microprocessors with various external devices
	CO 6	Analyze and compare the features of microprocessors and microcontrollers.
FEB150404: Web Technology	CO 1	Understanding the Principles of Object-Oriented Programming
	CO 2	Students should gain proficiency in the Java programming language, including its syntax, data types, control structures, and object-oriented features.
	CO 3	Designing and Implementing Classes &Applying Object-Oriented Analysis and Design (OOAD) Principles
	CO 4	Designing and Implementing Classes, Encapsulation and Information Hiding, Inheritance and Polymorphism, Exception Handling
	CO 5	Students should understand software development principles such as modularity, reusability, and maintainability, and apply them in their Java programming projects
Course Outcomes Semester-VI B.E.		
FEB160402: Theory Of Computation	CO 1	At the end of the course the students will be able to understand the basic concepts and application of Theory of Computation
	CO 2	Students will apply this basic knowledge of Theory of Computation in the computer field to solve computational problems and in the field of compiler also.
	CO 3	Will apply knowledge of computing and mathematics appropriate to the discipline
	CO 4	Learn about Turing Machines and Pushdown Automata and understand Linear Bound Automata and its applications
	CO 5	Solve computational problems regarding their computability and complexity and prove the basic results of the theory of computation
	CO 6	Will apply knowledge of computing and mathematics appropriate to the discipline



FEB160402: Computer Networks	CO 1	Analyze the requirements for a given organizational structure and select the most appropriate Networking architecture and technologies;
	CO 2	specify and identify deficiencies in existing protocols, and then go onto formulate new and better protocols;
	CO 3	Analyze, specify and design the topological and routing strategies for an IP based networking infrastructure
	CO 4	Have a working knowledge of datagram and internet socket programming
	CO 5	Implement any topology using network devices & Network Performance and Optimization
	CO 6	Network Security, Services and Applications
FEB160403: Software Engineering	CO 1	Prepare SRS (Software Requirement Specification) document and SPMP (Software Project Management Plan) document
	CO 2	Apply the concept of Functional Oriented and Object Oriented Approach for Software Design
	CO 3	Recognize how to ensure the quality of software product, different quality standards and software review techniques
	CO 4	Apply various testing techniques and test plan in.
	CO 5	Able to understand modern Agile Development and Service Oriented Architecture Concept of Industry
FEB160404: Advance Java	CO 1	Use various tools, and Validation techniques, use of different templates available in IntelliJ IDEA, Implementation and testing strategies in real time applications.
	CO 2	Use advanced concepts related to Web Services, spring and Hibernate
	CO 3	Understand the concepts related to Java Technology
	CO 4	Explore and understand use of Java Server Programming
	CO 5	Students learn skills to develop real time applications
	CO 6	At Develop advanced skills for programming in Java
FEB160001: Cyber Security	CO 1	Analyze and evaluate the cyber security needs of an organization.
	CO 2	Determine and analyze software vulnerabilities and



		security solutions to reduce the risk of exploitation.
	CO 3	Measure the performance and troubleshoot cyber security systems
	CO 4	Design and develop a security architecture for an organization
	CO 5	Design operational and strategic cyber security strategies and policies.
	CO 6	Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators
FEB160407: Project - I	CO 1	Identify the problem by applying acquired knowledge.
	CO 2	Analyze and categorize executable project modules after considering risks.
	CO 3	Choose efficient tools for designing project modules.
	CO 4	Combine all the modules through effective team work after efficient testing.
	CO 5	Elaborate the completed task and compile the project report.
Course Outcomes Semester-VII B.E.		
FEB170401: Compiler Design	CO 1	Understand the basic concepts and application of Compiler Design.
	CO 2	Apply their basic knowledge Data Structure to design Symbol Table, Lexical Analyzer , Intermediate.
	CO 3	Code Generation, Parser (Top Down and Bottom Up Design) and will able to understand strength of grammar.
	CO 4	Grammar and Programming Language
	CO 5	Understand various Code optimization Techniques and Error Recovery mechanisms.
	CO 6	Understand and Implement a Parser.
FEB170402: Data Mining & Business Intelligence	CO 1	Inspect how data can be pre-processed before applying data mining technique
	CO 2	Examine the different classification & clustering techniques in data mining
	CO 3	Apply data mining techniques to solve various problems.
	CO 4	Analyze and provide solutions for some problems



		using mining association technical.
	CO 5	Acquire the basic knowledge of business intelligence and data warehouse and its architecture.
	CO 6	Examine the advanced data mining techniques and the popular data mining tools.
FEB170405: .Net Technology	CO 1	Understand the basic framework of .net
	CO 2	Understanding and development of console applications
	CO 3	Understand the basic forms and controls which is used for making windows applications.
	CO 4	Understand how windows application can be used to connect database to retrieve the data
	CO 5	Understand ASP.net and HTML controls
	CO 6	Use ADO.NET in a web application to read, insert, and update data in a database.
FEB170408: Python Programming	CO 1	To develop proficiency in creating based applications using the Python Programming Language.
	CO 2	To be able to understand the various data structures available in Python programming language and apply them in solving computational problems.
	CO 3	To be able to do testing and debugging of code written in Python
	CO 4	To be able to draw various kinds of plots using PyLab.
	CO 5	To be able to do text filtering with regular expressions in Python & Data Analysis and Visualization:
	CO 6	To be able to create socket applications in Python
FEB170410: Project - II	CO 1	Identify the problem by applying acquired knowledge.
	CO 2	Analyze and categorize executable project modules after considering risks.
	CO 3	Choose efficient tools for designing project modules.
	CO 4	Combine all the modules through effective team work after efficient testing.
	CO 5	Elaborate the completed task and compile the project report.



Course Outcomes Semester-VIII B.E.			
FEB180401: Artificial Intelligence	CO 1	Understanding of AI Concepts and Techniques	
	CO 2	Data Analysis and Preprocessing	
	CO 3	Algorithm Selection and Design	
	CO 4	Model Training and Evaluation	
	CO 5	Integration and Deployment	
	CO 6	Ethical and Social Implications	
FEB180405: Cloud Computing	CO 1	Explain the various paradigm of cloud computing and computing techniques.	
	CO 2	Articulate the concepts, key technologies, strength and limitation of cloud computing and possible application	
	CO 3	Identify the architecture and infrastructure of cloud computing including SaaS, PaaS, IaaS, public cloud, private cloud and hybrid cloud.	
	CO 4	Interpret various data, scalability and cloud services to acquire efficient database for cloud storage.	
	CO 5	Describe the appropriate cloud computing solutions and recommendations according to application used.	
	CO 6	Explain the core issues of cloud computing such as security, privacy and interoperability and deal with controlling mechanism for accessing sage cloud service.	
FEB180407: Project-III	CO 1	Identify the problem by applying acquired knowledge.	
	CO 2	Analyze and categorize executable project modules after considering risks.	
	CO 3	Choose efficient tools for designing project modules.	
	CO 4	Combine all the modules through effective team work after efficient testing.	
	CO 5	Elaborate the completed task and compile the project report.	



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COURSE OUTCOME

FACULTY OF ENGINEERING



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B.E.
Bachelor of Engineering (B.E.)
Information Technology
Program Outcomes (PO)



For the implementation of an outcome-based education the first requirement is to develop an outcome based curriculum and incorporate an outcome-based assessment in the education system. By going through outcome-based assessments, evaluators will be able to evaluate whether the students have achieved the outlined standard, specific and measurable outcomes. With the proper incorporation of outcome-based education there will be a definite commitment to achieve a minimum standard for all learners without giving up at any level. At the end of the programme running with the aid of outcome-based education, a student will be able to arrive at the following outcomes:

- PO1** **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2** **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using principles of mathematics, natural sciences, and engineering sciences.
- PO3** **Design / development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4** **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5** **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.



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- PO6** **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.
- PO7** **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8** **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9** **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10** **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11** **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12** **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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B.E.

Bachelor of Engineering (B.E.)

Information Technology

Program Specific Outcomes (PSO)



Information Technology Programme Students will be able to:

- Use and apply current technical concepts and practices in the core Information Technologies of human computer interaction, information management, programming, networking.
- Effectively integrate IT-based solutions into the user environment



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B.E.

Bachelor of Engineering (B.E.)

Information Technology

Course Outcomes (CO)



Students of all under graduate Bachelor degree programs at the time of graduation will be able to learn:

Course Outcomes Semester-I B.E.		
Subject with code		Course Outcome
FEB110001: Engineering Mathematics-I	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions.
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics.
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables.
	CO 4	Mathematics has the potential to understand the core Technological studies.
	CO 5	To compute the areas and volumes using multiple integral techniques.
	CO 6	To perform matrix computation in a comprehensive manner.
FEB110202: Elements Of Mechanical Engineering	CO 1	To understand the fundamentals of mechanical systems.
	CO 2	To understand and appreciate significance of mechanical engineering in different fields of engineering.
	CO 3	Enhancement of fundamental knowledge of Thermodynamics.
	CO 4	Enhancement of fundamental knowledge of Fluid Mechanics and I.C. Engines.
	CO 5	Acquiring knowledge of materials and their properties for engineering applications.
	CO 6	Evaluate properties of steam. Demonstrate various types of boilers and their relative merits and demerits. Learning problem solving in particular domain.
FEB110003: Communication Skill	CO 1	Use various forms of vocabulary in varied situations in oral and written communication.
	CO 2	Understand the phonetics and the transcription pattern to learn correct pronunciation



	CO 3	Comprehend the dynamics of various rules of grammar and check its validation while they speak and write language correctly.
	CO 4	Use grammar effectively to make themselves competent Listener, Speaker, Reader and Writer by exposing to various set of situations.
	CO 5	Write various formal and informal documents of day to day life and professional set up.
	CO 6	Demonstrate the qualities of writing in diverse situation by using the nuances such as conciseness, clarity, accuracy, organization, and coherence.
FEB110304:Elements Of Electrical Engineering	CO 1	Understand electrical current, potential difference, power and energy, sources of electrical energy, resistance and its behavior with temperature.
	CO 2	Use the Ohm's Law and the Kirchhoff's Law and star delta transformation for solving resistive series, parallel and series-parallel circuits.
	CO 3	Define Electric field, lines of force, electric field intensity, electric flux, flux density and permittivity. Capacitor, charging and discharging phenomena of capacitors and calculations of capacitance for capacitors connected in series and parallel circuits.
	CO 4	Understand Concepts of Real power, Reactive power, apparent power and Power factor and perform calculations of these quantities for series and parallel R-L-C circuits.
	CO 5	Understand the importance of safety and the precaution to be taken while working with electrical equipment and accessories. Understand the working principle, usage and construction of circuit protection devices such as fuse, MCB, ELCB & Relays
	CO 6	Design simple analog signal processing functions using operational amplifiers.
FEB110005:Physics	CO 1	The student will demonstrate the ability to think in core concept of their engineering application by studying various topics involved in branch specific applications.
	CO 2	The student will demonstrate understanding of basic theory, properties and applications of Superconductivity.
	CO 3	The student will gain knowledge of basic theoretical and mathematical concept of electronic materials.
	CO 4	The student will demonstrate understanding of basic



		principles, properties and applications associated with semiconducting materials.
	CO 5	The student will demonstrate understanding of basic theory and properties associated with optoelectronic materials.
	CO 6	The student will demonstrate understanding of basic principles, properties, type and application Lasers
FEB110206:Basic Workshop	CO 1	To acquire skills in basic engineering practice
	CO 2	To acquire practical skills in the trades
	CO 3	Understand modern manufacturing operations, including their capabilities, limitations, and how to design economically.
	CO 4	Welding and soldering operations
	CO 5	Identify and apply suitable tools for machining processes including turning, facing, thread cutting and tapping
Course Outcomes Semester-II B.E.		
FEB120001: Engineering Mathematics – II	CO 1	To apply mathematical tools needed in evaluating vector calculus and their usage like Work, Circulation and Flux
	CO 2	To apply the Laplace transform as tools which are used to solve differential equations and Fourier integral representation
	CO 3	To apply effective mathematical tools for the solutions of first order ordinary differential equations
	CO 4	To apply effective mathematical methods for the solutions of higher order ordinary differential equations
	CO 5	To implement the solution for engineering problem
	CO 6	To use series solution methods and special functions like Bessels' functions
FEB120302: Basic Electronics	CO 1	Understand & apply fundamental electrical laws and circuit theorems to electrical circuits.
	CO 2	Analyze single phase and three phase AC circuits.
	CO 3	Design simple combinational and sequential functions using gates and flip-flops.
	CO 4	Comprehend electrical installations, their protection and personnel safety.
	CO 5	Explain the organization of computer systems and computer networks
Feb120403:Computer	CO 1	Understand the fundamentals and structure of a C programming language



Programming With C	CO 2	Apply the loops, arrays, functions and string concepts in C to solve the given problem
	CO 3	Apply the pointers and text input output files concept to find the solution for the given applications.
	CO 4	Use the Enumerated, Data types, Structures and Unions
FEB120204:Engineering Graphics	CO 1	To know and understand the conventions and the method of engineering drawing.
	CO 2	Identify the Drawing Symbols, Conventions used in Engineering Drawing
	CO 3	Construct the Different types of Engineering Curves.
	CO 4	To improve their visualization skills so that they can apply these skill in developing new products.
	CO 5	Apply Descriptive Geometry Principles to Solve Engineering Problems Involving Points, Lines, Planes and Solids
	CO 6	To improve their technical communication skill in the form of communicative drawings
FEB120105:Environmental Science	CO 1	Students are able to learn types of disasters and its profile in India
	CO 2	Students are able to understand the causes and impacts of disasters on environment and related case studies of Global and National disasters.
	CO 3	Students are able to learn about risk reduction approaches of disasters with safety issues in mitigating industrial disasters.
	CO 4	To understand the concept of Disaster Management Cycle and its Risk Reduction Measures
	CO 5	Students to learn the National Acts and policies for mitigating disasters, Role of Army, Police, Community, Corporate, Media etc. for post Disaster Management.
Course Outcomes Semester-III B.E.		
FEB130003: E-Commerce Management	CO 1	Understand the basic concepts and technologies used in the field of management information systems;
	CO 2	Have the knowledge of the different types of management information systems
	CO 3	Understand the processes of developing and implementing information systems;



	CO 4	Be aware of the ethical, social, and security issues of information systems;
FEB130002: Indian Constitution	CO 1	Explain the background of the present constitution of India and features.
	CO 2	Utilize the fundamental rights and duties.
	CO 3	Understand the working of the union executive, parliament and judiciary
	CO 4	Understand the working of the state executive, legislature and judiciary.
	CO 5	Utilize the special provisions and statutory institutions.
	CO 6	Show national and patriotic spirit as responsible citizens of the country
FEB130401: Engineering Mathematics-III	CO 1	understand the terminologies of basic probability, two types of random variables and their probability functions
	CO 2	observe and analyze the behavior of various discrete and continuous probability distributions
	CO 3	understand the central tendency, correlation and correlation coefficient and also regression
	CO 4	apply the statistics for testing the significance of the given large and small sample data by using t- test, F- test and Chi-square test
	CO 5	understand the fitting of various curves by method of least square
	CO 6	understand the central tendency methods and apply it in computer problems
FEB130402: Digital Electronics	CO 1	Explain about digital number systems and logic circuits
	CO 2	The student should be able to solve logic function minimization
	CO 3	The students should be able to differentiate between combinational and sequential circuits such as decoders, encoders, multiplexers, de-multiplexers, flip-flops, counters, registers.
	CO 4	They should be able to design using FSM
	CO 5	They should be able to start writing HDL codes for various digital circuits
	CO 6	At the end they should be able to develop a course project using digital integrated circuits
FEB130501: Object Oriented	CO 1	Use various Java constructs, features and libraries for simple problems.



Programming With Java	CO 2	Demonstrate how to define and use classes, inheritance, interfaces, create objects and methods, how to override and overload methods, compile and execute programs
	CO 3	Write a program using exception handling, multithreading with synchronization.
	CO 4	Write a program using Files, binary I/O, collection Frameworks for a give no problem
	CO 5	Design and develop GUI based applications in a group using modern tools and frameworks.
FEB130404: Data Structure & Algorithms	CO 1	Define data structures like array, stack, queues and linked list.
	CO 2	Explain insertion, deletion and traversing operations on data structures.
	CO 3	Identify the asymptotic notations to find the complexity of an algorithm.
	CO 4	Compare various searching and sorting techniques.
	CO 5	Choose appropriate data structure while designing the algorithms.
	CO 6	Design advance data structures using nonlinear data structures.
Course Outcomes Semester-IV B.E.		
FEB140001: Essence Of Indian Traditional Knowledge	CO 1	Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective
	CO 2	Identify the concept of Traditional knowledge and its importance.
	CO 3	Explain the need and importance of protecting traditional knowledge.
	CO 4	Illustrate the various enactments related to the protection of traditional knowledge.
	CO 5	Interpret the concepts of Intellectual property to protect the traditional knowledge.
	CO 6	Explain the importance of Traditional knowledge in Agriculture and Medicine.
FEB140401: Discrete Mathematics	CO 1	Understand the basic principles of sets and operations in sets and apply counting principles to determine probabilities, domain and range of a function, identify one-to- one functions, perform the composition of functions and apply the properties of functions to application problems.
	CO 2	Write an argument using logical notation and determine if the argument is or is not valid. To



		simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic. To express a logic sentence in terms of predicates, quantifiers, and logical connectives.
	CO 3	Apply relations and to determine their properties. Be familiar with recurrence relations
	CO 4	Use the properties of algebraic structures.
	CO 5	Interpret different traversal methods for trees and graphs. Model problems in Computer Science using graphs and trees.
	CO 6	understand the central tendency methods and apply it in computer problems
FEB140402: Computer Organization	CO 1	Identify, understand and apply different number systems and codes.(Understanding)
	CO 2	Identify, compare and assess to Bus and memory (Applying, Analyzing)
	CO 3	Identify and analyze basic organization of CPU (Analyzing)
	CO 4	Identify and learn the concept of memory hierarchy
	CO 5	Analyze and learn peripheral devices (Analyzing, Designing)
FEB140403: Operating System	CO 1	Students will describe basic concepts of Operating System
	CO 2	Describe the important computer system resources and the role of operating system in their management policies and algorithms
	CO 3	Understand the process management policies and scheduling of processes by CPU
	CO 4	Evaluate the requirement for process synchronization and coordination handled by operating system
	CO 5	Describe and analyze the memory management and its allocation policies.
	CO 6	Identify use and evaluate the storage management policies with respect to different storage management technologies
	CO 7	Identify the need to create the special purpose operating system.
FEB140404: Design & Analysis Of Algorithms	CO 1	Analyze the asymptotic performance of algorithms.
	CO 2	Derive and solve recurrences describing the performance of divide-and-conquer algorithms
	CO 3	Find optimal solution by applying various methods.



	CO 4	Apply pattern matching algorithms to find particular pattern.
	CO 5	Differentiate polynomial and non-polynomial problems.
	CO 6	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate
FEB140405: Database Management System	CO 1	Students will be able to know the need of Program Data Independence and DBMS technology as a backend database development in Application Software.
	CO 2	Students will be able to apply E-R Modelling to prepare E-R diagrams for database design. Formulate relational tables from E-R diagram and Relational modelling, populate relational database and formulate SQL queries on data.
	CO 3	Students will be able to identify the Functional Dependency in data and eliminate it with Normalization to improve database design.
	CO 4	Students will be able to learn Concurrency Control mechanism, Database Recovery methods with Transaction Theory.
	CO 5	Students will be able to apply the knowledge, techniques, models and modern tools to become successful database professionals in software industries.
Course Outcomes Semester-V B.E.		
FEB150401: System Programming	CO 1	Understand different components of system software
	CO 2	Understand intermediate code generation in context of language designing
	CO 3	Recognize operating system functions such as memory management as pertaining to run time storage management.
	CO 4	To understand and implement Assembler, Loader, Linkers, Macros & Compilers
	CO 5	To introduce students the process management and information management via different software tools
	CO 6	To introduce student the fundamental model of the processing of high-level language programs for execution on computer system.
FEB150501: Python Programming	CO 1	Discuss the logical solutions through Flowcharts,



		Algorithms and Pseudo code
	CO 2	Explain the syntax for python programming constructs.
	CO 3	Compute the flow of the program to obtain the programmatic solution.
	CO 4	Examine the programs with sub problems using 'Python' language.
	CO 5	Compute the compound data using Python lists, tuples, and dictionaries
	CO 6	Apply python programs to read and write data from/to files.
FEB150502: Computer Networks	CO 1	Identify various layers of network and discuss the functions of physical layer.
	CO 2	Discuss how data flows from one node to another node with regard to data link layer
	CO 3	Explain the different services of network layer
	CO 4	Compare the different transport layer protocols and their applicability based on user requirements
	CO 5	Describe the working of various application layer protocols
	CO 6	Evaluate the performance of network and analyze routing algorithms
FEB150503: Web Technology	CO 1	Understand the concepts of HTML, CSS.
	CO 2	Understand the concepts of JavaScript, PHP, jQuery, AJAX, XML, JSON
	CO 3	Develop the web pages, client-side scripts using HTML, CSS, JavaScript.
	CO 4	Develop object oriented, Server-Side Scripts using PHP to generate and display the contents dynamically.
	CO 5	Inspect JavaScript frameworks like jQuery and Backbone which facilitates developer to focus on core features.
FEB150405: Computer Graphics	CO 1	Understand graphics hardware, software, OpenGL Graphics Primitives along with line and circle drawing algorithms.
	CO 2	Design Geometric transformations on 2D objects and polygon filling.
	CO 3	Design Geometric transformations on 3D objects, 2D clipping and color models.
	CO 4	Demonstrate visible surface detection methods and different types of projections.



	CO 5	Illustrate interactive computer graphic, Bezier Spline Curves using the OpenGL.
FEB150504: Data Mining & Business Intelligence	CO 1	Inspect how data can be pre-processed before applying data mining technique Understand the data Warehouses, Operational Data Stores (ODS) and OLAP characteristics
	CO 2	Understand the data mining concept, application and their usage
	CO 3	Analyze the frequent patterns using association analysis algorithms like apriori, FP-growth etc.
	CO 4	Understand the concept of classification, different classification algorithms and their applications
	CO 5	Understand the concept of clustering and different cluster analysis methods
	FEB150505: Seminar - I	CO 1
CO 2		Undertake problem identification, formulation and solution
CO 3		Design engineering solutions to complex problems utilizing a systems approach.
CO 4		Communicate with engineers and the community at large.
CO 5		Demonstrate the knowledge, skills and attitudes of a professional engineer.
Course Outcomes Semester-VI B.E.		
FEB160403: Software Engineering	CO 1	Prepare SRS (Software Requirement Specification) document and SPMP (Software Project Management Plan) document
	CO 2	Apply the concept of Functional Oriented and Object Oriented Approach for Software Design
	CO 3	Recognize how to ensure the quality of software product, different quality standards and software review techniques
	CO 4	Apply various testing techniques and test plan in.
	CO 5	Able to understand modern Agile Development and Service Oriented Architecture Concept of Industry
FEB160501: Computer Network Security	CO 1	Understand the principles of the application layer protocols HTTP, FTP, SMTP and DNS
	CO 2	Understand the transport layer services, TCP and UDP protocols.
	CO 3	Understand the router architecture, IP and routing



		algorithms
	CO 4	Understand the concepts of Network security and cryptography protocols.
	CO 5	Understand the multimedia network applications, audio, video streaming and network management.
FEB160502: Advance Java	CO 1	Interpret the need for advanced Java concepts like enumerations, Auto Boxing and annotations
	CO 2	Demonstrate the concept of Collections, Comparators, Legacy classes and Interfaces.
	CO 3	Understand the use of string handling functions.
	CO 4	Develop distributed web application using Servlets and JSP.
	CO 5	Apply the concepts of JDBC, Transaction processing, statement objects and Result set to perform operations on Database
FEB160501: Mobile Application Development	CO 1	Build an application using Android development environment.
	CO 2	Experiment with the method of storing, sharing and retrieving the data in Android Applications
	CO 3	Examine responsive user interface across wide range of devices.
	CO 4	Create a mobile Application by using various components like activity, views, services, content providers and receivers.
FEB160001: Cyber Security	CO 1	Analyze and evaluate the cyber security needs of an organization.
	CO 2	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.
	CO 3	Measure the performance and troubleshoot cyber security systems
	CO 4	Design and develop a security architecture for an organization
	CO 5	Design operational and strategic cyber security strategies and policies.
	CO 6	Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators
FEB160505: Seminar - II	CO 1	Demonstrate a sound technical knowledge of their selected mini project topic.
	CO 2	Undertake problem identification, formulation and



		solution
	CO 3	Design engineering solutions to complex problems utilizing a systems approach.
	CO 4	Communicate with engineers and the community at large.
	CO 5	Demonstrate the knowledge, skills and attitudes of a professional engineer.
Course Outcomes Semester-VII B.E.		
FEB170501: Artificial Intelligence	CO 1	Understanding of AI Concepts and Techniques
	CO 2	Data Analysis and Preprocessing
	CO 3	Algorithm Selection and Design
	CO 4	Model Training and Evaluation
	CO 5	Integration and Deployment
	CO 6	Ethical and Social Implications
FEB170502: Machine Learning	CO 1	Learn the basics of learning problems with hypothesis and version spaces
	CO 2	Understand the features of machine learning to apply on real world problems
	CO 3	Characterize the machine learning algorithms as supervised learning and unsupervised learning and Apply and analyze the various algorithms of supervised and unsupervised learning.
	CO 4	Analyze the concept of neural networks for learning linear and non-linear activation functions.
	CO 5	Learn the concepts in Bayesian analysis from probability models and methods.
	CO 6	Understand the fundamental concepts of Genetic Algorithm and Analyze and design the genetic algorithms for optimization engineering problems.
FEB170405: .Net Technology	CO 1	Understand the basic framework of .net
	CO 2	Understanding and development of console applications
	CO 3	Understand the basic forms and controls which is used for making windows applications.
	CO 4	Understand how windows application can be used to connect database to retrieve the data
	CO 5	Understand ASP.net and HTML controls
	CO 6	Use ADO.NET in a web application to read, insert, and update data in a database.
FEB170407: Big Data Analytics	CO 1	Understand simple applications using Java language.
	CO 2	Apply map reduce concepts for desired applications.
	CO 3	Implement programs by making use of Hadoop I/O



	CO 4	Inspect the big data using programming tools like Pig and Hive.
	CO 5	Analyze file systems such as GFS and HDFS.
FEB170505: Ethical Hacking	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables
	CO 4	Mathematics has the potential to understand the core Technological studies
	CO 5	To compute the areas and volumes using multiple integral techniques
	CO 6	To perform matrix computation in a comprehensive manner
	Course Outcomes Semester-VIII B.E.	
FEB180501: Project (Industrial Internship)	CO 1	Analyze the problem, formulation and solution of the selected project.
	CO 2	Develop solutions for contemporary problems using modern tools for sustainable development.
	CO 3	Choose efficient tools for designing project modules.
	CO 4	Combine all the modules through effective team work after efficient testing.
	CO 5	Elaborate the completed task and compile the project report.



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COURSE OUTCOME

FACULTY OF ENGINEERING



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M.E.
Master of Engineering (M.E.)
Mechanical Engineering
(Thermal Engineering)
Program Outcomes (PO)



For the implementation of an outcome-based education the first requirement is to develop an outcome based curriculum and incorporate an outcome-based assessment in the education system. By going through outcome-based assessments, evaluators will be able to evaluate whether the students have achieved the outlined standard, specific and measurable outcomes. With the proper incorporation of outcome-based education there will be a definite commitment to achieve a minimum standard for all learners without giving up at any level. At the end of the programme running with the aid of outcome-based education, a student will be able to arrive at the following outcomes:

PO1	An ability to acquire, apply and share in-depth knowledge in the area of thermal engineering.
PO2	An ability to conduct independent research and generate new knowledge for the benefit of mankind
PO3	Graduates will demonstrate an ability to identify, formulate and solve thermal engineering problems
PO4	Graduates will demonstrate research skills to critically analyze complex thermal engineering problems for synthesizing new and existing information for their solutions.
PO5	An ability to maintain a high level of professional and intellectual integrity, ethics of research and scholarly standards.
PO6	Graduates will demonstrate skills to use modern engineering tools, software and equipment to analyze and solve complex engineering problems.
PO7	Graduates will demonstrate and ability to work on laboratory and multidisciplinary tasks.
PO8	Students will be able to convey thoughts effectively on the basis of acquired soft skills and self-confidence with peers, subordinates and higher authority for the consistent and effective knowledge sharing process
PO9	Graduates will be able to understand the need for, and an ability to engage in life-long learning and continual updating of professional skills
PO10	Graduate will acquire knowledge about current issues/advances in engineering practices.



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M.E.

Master of Engineering (M.E.)

Mechanical Engineering

(Thermal Engineering)

Program Specific Outcomes (PSO)



Thermal Engineering Programme Students will be able to:

PSO-1	To analyze the problems and create solution by applying engineering knowledge with a multidisciplinary approach in the area of thermal engineering, manufacturing systems and product design
PSO-2	To analyze, interpret and provide solutions to the real life mechanical engineering problems using engineering software/tools.
PSO-3	To work effectively in a team to address complex issues by engaging in lifelong learning and following ethical and environmental practices



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M.E.

Master of Engineering (M.E.)

Mechanical Engineering

(Thermal Engineering)

Course Outcomes (CO)



Students of all Master degree programs will be able to learn:

Course Outcomes Semester-I M.E.		
Subject with code		Course Outcome
Research Skill & Methodology FEM110001	CO 1	Conduct a quality literature review and find the research gap.
	CO 2	Identify an original and relevant problem and identify methods to find its solution.
	CO 3	Validate the model.
	CO 4	Present and defend the solution obtained in an effective manner in written or spoken form.
	CO 5	Take up and implement a research project/ study.
Disaster Management FEM110002	CO 1	Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
	CO 2	Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
	CO 3	Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
	CO 4	Critically understand the strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in.
	CO 5	Understand impact of Disasters and realization of societal responsibilities.
	CO 6	Apply Disaster management principles.
Applied Computational Method FEM115101	CO 1	Students will be able to develop mathematical models of physical phenomena.
	CO 2	Students will be able to solve ordinary and partial differential equations analytically.
	CO 3	Students will learn fundamentals and applications of algebra for engineering problems.
	CO 4	Apply iterative and transformation methods in Thermal engineering.
	CO 5	Carry out interpolations and curve fitting.
	CO 6	Students will learn fundamentals and applications of algebra for engineering problems.
Advanced Thermodynamics and Heat Transfer FEM115102	CO 1	Apply entropy principle to various thermal engineering applications.
	CO 2	Apply the concept of second law efficiency and exergy principle to various thermal engineering applications.
	CO 3	Analyze steady state and transient heat conduction



		problems of real life Thermal systems.
	CO 4	Analyze extended surface heat transfer problems and problems of phase change heat transfer like boiling and condensation.
	CO 5	Analyze radiation heat transfer problems of various thermal systems.
	CO 6	Apply the concepts of radiation heat transfer for enclosure analysis.
Advanced Internal Combustion Engine (Elective-I) FEM115105	CO 1	The student can identify different areas of Advanced Internal Combustion Engine.
	CO 2	Find the applications of all the areas in day to day life.
	CO 3	Understand the operating characteristics of IC engines.
	CO 4	Perform a thermodynamic analysis of IC engine cycles.
	CO 5	Perform a combustion analysis of IC engines.
	CO 6	Classify and analyze alternate power sources for automobiles.
Cryogenic Engineering (Elective-I) FEM115106	CO 1	Understand the concept of cryogenic fundamental.
	CO 2	Learn the requirement and use of proper insulation.
	CO 3	Understand about the concept of cry cooler and application in various fields.
	CO 4	Select the proper cryogenic fluid for particular applications like, cryo metallurgy, medical applications etc.
	CO 5	Learn about the cryogenic refrigerators for different applications.
Solar Energy Engineering (Elective-I) FEM115107	CO 1	Apply fundamental solar energy concepts to individual components.
	CO 2	Predict performance of solar energy systems.
	CO 3	Select systems using solar engineering principles.
	CO 4	Design systems to utilize solar energy.
	CO 5	To understand the thermal analysis, thermal efficiency, energy losses of concentrating and non-concentrating collectors of solar radiation system.
	CO 6	To know the various applications of solar thermal energy.
Thermal and Nuclear Power Plants (Elective-II) FEM115108	CO 1	Carry out energy analysis of thermal & nuclear power plants.
	CO 2	Discuss the layout of thermal power plant and working principle of various types of boilers.
	CO 3	Discuss the various types of nuclear reactors used in nuclear power plant.
	CO 4	Summarize the principles and working of various renewable energy power plants.
	CO 5	Explain the energy, economic and environmental issues of power plants.
	CO 6	Paraphrase the different types of power plant, its function



		and issues related to them.
Hydrogen and Fuel Cell Technology (Elective-II) FEM115109	CO 1	Students able to understand and demonstrate the hydrogen production technologies, storage methods and strategies for transition to hydrogen economy.
	CO 2	Students able to know the concepts and characteristics of various types of fuel cell.
	CO 3	Students able to consist and demonstrate the working of fuel cells.
	CO 4	Students able to know the application of fuel cells with economic and environment analysis.
Design of Heat Exchanger (Elective-II) FEM115110	CO 1	Learn how to design common types of heat exchangers; namely shell-and-tube, tube and tube.
	CO 2	Learn to select appropriate Heat Exchanger for the given application.
	CO 3	Become aware of single and multiphase heat transfer and friction coefficient correlations, and they will know how to select the appropriate ones for the case in hand.

Course Outcomes Semester-II M.E.		
Subject with code		Course Outcome
Research Paper Writing FEM120001	CO 1	Understand that how to improve your writing skills and level of readability.
	CO 2	Learn about what to write in each section.
	CO 3	Understand the skills needed when writing a Title.
	CO 4	Ensure the good quality of paper at very first-time submission.
	CO 5	Relate the quantum concepts in electron microscopes.
	CO 6	Describe the unit cell characteristics and the growth of crystals.
Experimental Techniques and Instrumentations in Thermal Systems FEM125101	CO 1	Provide students with a comprehensive overview of various experimental techniques used in the field of thermal systems.
	CO 2	Familiarize students with a range of instrumentation commonly employed in thermal experiments, such as thermocouples, thermistors, flow meters, pressure sensors, and heat flux sensors.
	CO 3	Teach students the underlying principles behind measurements in thermal systems, including temperature, pressure, flow rates, heat transfer rates, and other relevant parameters
	CO 4	Instruct students on calibration methods for thermal measurement instruments to ensure accurate and reliable data



	CO 5	Teach students how to assess and quantify uncertainties associated with measurements in thermal systems, promoting a thorough understanding of the limitations of experimental data.
Advanced Fluid Mechanics FEM125102	CO 1	Apply the fundamentals of kinematics and conservation laws of fluid flow systems.
	CO 2	Apply the principles of high and low Reynolds number flows to fluid flow systems.
	CO 3	Apply the principles of one dimensional isentropic flow to variable area duct and analyze the principles of normal shock formation and its effects.
	CO 4	Apply the principles of compressible flow to constant area duct subjected to friction or heat transfer.
	CO 5	Apply the concepts in the analysis of fluid flow problems.
Advanced Refrigeration Engineering (Elective-III) FEM125103	CO 1	Appraise refrigerants, their properties and applications.
	CO 2	Discuss different air and vapour compression refrigeration systems and analyze them.
	CO 3	Analyze vapour absorption cycles.
	CO 4	Estimate the refrigeration load and appraise applications of refrigeration.
	CO 5	Evaluate conventional and alternate refrigerants and their impact on environment.
Design and Optimization of Thermal System (Elective- III) FEM125104	CO 1	Explain engineering design of thermal systems.
	CO 2	Discuss different models used in modelling of thermal systems.
	CO 3	Appraise various optimization techniques and apply the same to thermal system design.
	CO 4	Determine costing of thermal systems.
Combustion Engineering (Elective-III) FEM125105	CO 1	Discuss concepts of the thermo-chemistry of combustion to evaluate the quality of combustion in energy systems, including thermal engines.
	CO 2	Appraise laminar and turbulent premixed and non-premixed flames.
	CO 3	Model droplet evaporation and burning and explain their applications.
	CO 4	Analyze combustion of solid fuels.
Energy Conservation & Management (Elective-IV) (FEM125106)	CO 1	To discuss various principles of energy conservation and to make calculation of cooling load of different types of building.
	CO 2	To discuss and make calculations pertaining to energy efficiency in thermal and electrical utilities.
	CO 3	To appraise the energy audit reports of mechanical utilities and lighting system.



	CO 4	To discuss various methods of energy economics.
	CO 5	To discuss various climate policies.
Advanced Air conditioning Engineering (Elective-IV) FEM125107	CO 1	To make calculation of various Psychrometric processes
	CO 2	To estimate the cooling load requirements of residential and commercial building and design the system components accordingly.
	CO 3	To make use of tables and nomographs to design air distribution systems.
	CO 4	To develop the skills to analyze the domestic and industrial requirement of air conditioning systems and evaporative cooling equipment.
	CO 5	To select fan for particular air conditioning system and discuss recent developments in air conditioning.
Computational Fluid Dynamics (Elective-IV) FEM125108	CO 1	To develop perception of major theories, approaches and methodologies used in CFD
	CO 2	To analyze and apply CFD analysis to solve major engineering design problems involving fluid flow and heat transfer
	CO 3	To build up the skills in the implementation of CFD methods (e.g. boundary conditions) in actual engineering using commercial CFD codes.
Mini Project With Seminar FEM125109	CO 1	Identify engineering problems reviewing available literature.
	CO 2	Study different techniques used to analyze complex systems.
	CO 3	Solve a live problem using software/analytical/computational tools and present solution by using his/her technique applying engineering principles
	CO 4	Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.
	CO 5	Outline annotated bibliography of research demonstrating scholarly skills
	CO 6	Prepare a well-organized report employing elements of critical thinking and technical writing.

Course Outcomes Semester-III M.E.		
Subject with code		Course Outcome
Internal Review-I FEM135101	CO 1	The student can identify different areas of mid semester Thesis Progress Review.
	CO 2	Can find the applications of all the areas in day-to-day life.
Dissertation Phase-I	CO 1	Students should be able to identify and articulate a clear



FEM135102		research problem or question that is relevant to the field of study.
	CO 2	Demonstrate the ability to conduct a comprehensive literature review that establishes the existing knowledge and identifies gaps or areas for further investigation
	CO 3	Formulate specific research objectives and questions that guide the research process and contribute to addressing the identified research problem
	CO 4	Develop a theoretical framework that provides a conceptual foundation for the research, linking the study to relevant theories or conceptual models
	CO 5	Design an appropriate research methodology, including the selection of research methods, data collection techniques, and data analysis procedures
Industrial Safety (Open Elective) FEM135103	CO 1	Analyze the effect of release of toxic substances.
	CO 2	Understand the industrial laws, regulations and source models.
	CO 3	Apply the methods of prevention of fire and explosions.
	CO 4	Understand the relief and its sizing methods.
	CO 5	Understand the methods of hazard identification and preventive measures.
Cost management of Engineering Projects (Open Elective) FEM135104	CO 1	Understand the concept of strategic cost management.
	CO 2	Analyze the decision Making and Pricing Strategies.
	CO 3	Understand the concept of cost concepts in decision-making; Relevant cost, Differential cost, Incremental cost and Opportunity cost.
	CO 4	Determination of Costing System and Inventory valuation.
	CO 5	Analyze the provision of data for decision making.
Composite Materials (Open Elective) FEM135105	CO 1	Explain the advantages and applications of composite materials
	CO 2	Describe the properties of various reinforcements of composite materials
	CO 3	Summarize the manufacture of metal matrix, ceramic matrix and C-C composite
	CO 4	Describe the manufacture of polymer matrix composites.
	CO 5	Formulate the failure theories of composite materials.
Advanced Thermal Turbo Machines (Elective V) FEM135106	CO 1	To discuss the principles and energy transfer process in turbo machines.
	CO 2	To understand the structural and functional aspects of major components of turbo machines.
	CO 3	Analyze the turbo machines to improve and optimize its performance.



	CO 4	To understand control and maintenance aspects of turbo machines.
Jet Propulsion & Air-Craft Engineering (Elective V) FEM135107	CO 1	Explain fundamental of gas dynamics.
	CO 2	Appraise the working of different types of aircraft and rocket propulsion systems and their performance characteristics.
	CO 3	Discuss different propulsion engine with respect to various operating and effecting parameters.
Exergy Analysis of Thermal Systems (Elective V) FEM135108	CO 1	To make calculations of exergy and lost work for heat engine, refrigeration and heat pump cycle.
	CO 2	To analyze different thermal process with exergy view point.
	CO 3	To appraise exergy analysis of different power plant cycles.
	CO 4	To appraise exergy analysis of different refrigeration cycles and evaporating cooling.
	CO 5	To compute exergy-economics costing of thermal components.

Course Outcomes Semester-IV M.E.		
Subject with code		Course Outcome
Internal Review-II FEM145101	CO 1	The student can identify different areas of mid semester Thesis Progress Review.
	CO 2	Can find the applications of all the areas in day-to-day life
	CO 3	Review students' written and oral communication skills, particularly in the context of presenting experimental findings, writing reports, and discussing thermal concepts.
DISSERTATION PHASE-II FEM145102	CO 1	Solve identified technical problem using acquired knowledge and skill.
	CO 2	Develop a realistic and detailed timeline for the completion of each phase of the research, including data collection, analysis, and the writing of the dissertation.
	CO 3	Demonstrate effective oral and written communication skills by presenting the research proposal to an academic audience, including faculty members or a dissertation committee.
	CO 4	Ability to incorporate feedback from faculty or the dissertation committee into the research proposal, showing a capacity for constructive revision and improvement.
	CO 5	Draw conclusions based on the results.



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COURSE OUTCOME

FACULTY OF ENGINEERING



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Master of Engineering (Structural)

Civil Engineering



PROGRAM OUTCOMES (PO)

PO1: Scholarship of Knowledge: To understand the advanced concepts of analysis and design of structures.

PO2: Critical Thinking: To formulate and postulate mathematical models for different structural systems.

PO3: Problem Solving: To propose optimum solutions for designing a wide range of structures.

PO4: Research Skill: To apply research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Usage of Modern Tools: To enhance the skills in the usage of modern structural analysis and design tools.

PO6: Collaborative and Multidisciplinary work: To involve effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary research.

PO7: Communication: To communicate effectively with the research community and industry by acquiring the skills to write scientific communications, prepare technical reports, deliver presentations and convey instructions for execution.

PO8: Life-long Learning: To possess the zeal and capacity for continuously updating the technical skills in accordance with the ever evolving industrial and research developments.

PO9: Ethical Practices and Social Responsibility: To cultivate and apply ethical principles in professional practices and to follow the norms and guidelines laid by the organisation.

PO10: Independent and reflective learning: To examine critically the scientific and technical reports with capability of taking corrective measures independently.



PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO_01: To implement structural engineering projects as an individual or as a member in design and execution team.

PSO_02: To carry out impactful research in structural and multidisciplinary domains.

PSO_03: To effectively examine materials and technical reports and ensure sustainable construction practices.



On completion of the course students will be able to

Course Code	Course Name	Course Outcome
First Year Courses		
FEM110001	Research skill and Methodology	<ol style="list-style-type: none">1. Conduct a quality literature review and find the research gap.2. Identify an original and relevant problem and identify methods to find its solution3. Validate the model4. Present and defend the solution obtained in an effective manner in written or spoken form5. Take up and implement a research project/ study.
FEM110002	Disaster Management	<ol style="list-style-type: none">1. learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response2. Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.3. develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations4. Study and assess vulnerability of a geographical area.5. Students will be equipped with various methods of risk reduction measures and risk
FEM115201	Advanced Concrete Design	<ol style="list-style-type: none">1. Carry out load calculation, analysis, design and detailing of Slender Column, Corbel, Deep beams, flat slabs, water tanks, bunker and silos, Shear Walls as per relevant IS code of practice.,2. Analysis and design of raft foundation, strip footing and pile caps, Ensure serviceability criteria for reinforced concrete structural elements.3. Analyze and design a flat slab system.4. Discuss fire and seismic resistance of concrete structures.5. Analyze and design bunkers, silos and chimneys.



FEM115202	Advanced Structural Analysis	<ol style="list-style-type: none">1. Analyze skeleton structures using stiffness method2. Analyze skeleton structures having secondary effects using stiffness method3. Derive element properties and analyze structure using finite element method4. Solve realistic engineering problems through computational simulations using finite element code.5. Apply energy principles for the analysis of determinate/indeterminate structures.
FEM115203	Analytical and Numerical methods for Structural Engg.	<ol style="list-style-type: none">1. Solve algebraic equations,2. Obtain numerical solution of ordinary and partial differential equations,3. Apply integration method/s for structural analysis,4. Carry out interpolations and curve fitting,5. Obtain solution of Eigen value problems and Fourier series for structural analysis,6. Apply iterative and transformation methods in structural engineering.
FEM115204	Theory of Structural Stability	<ol style="list-style-type: none">1. Determine stability of columns and frames2. Determine stability of beams and plates3. Use stability criteria and concepts for analyzing discrete and continuous systems.4. Understand the concept of structural stability and the approach for design for stability.5. Apply advanced numerical techniques to bucking analysis of structures.
FEM115205	Structural Health Monitoring And Retrofitting Of Structures	<ol style="list-style-type: none">1. Diagnose the distress and the cause of distress in the structure.2. Detect the changes in the characteristics of the structure3. Assess the remaining performance capacity4. Choose & apply the appropriate repair and retrofitting techniques for damaged structures.5. Identify suitable Sensors & Instruments required in SHM for in-service performance of structures.
FEM115206	Structural Optimization	<ol style="list-style-type: none">1. Understand optimization techniques,2. Classify the optimization problems,3. Derive response quantities corresponding to design variable,4. Apply optimization techniques to trusses, beams and frames.



FEM120001	Research Paper Writing	<ol style="list-style-type: none">1. Understand that how to improve your writing skills and level of readability.2. Learn about what to write in each section.3. Understand the skills needed when writing a Title.4. Ensure the good quality of paper at very first-time submission.
FEM125201	Advanced Steel Design	<ol style="list-style-type: none">1. Apply unified code philosophy to steel building design2. Apply plastic method for design of beams and frames.3. Design & detail Industrial building, steel stacks & composite structures as per the IS code.4. Use of cold form sections in the steel structure including pre-engineered building.5. Develop design basis report.
FEM125202	Structural Dynamics	<ol style="list-style-type: none">1. Analyze and Interpret dynamics response of single degree freedom system using2. fundamental theory and experiments3. Analyze and Interpret dynamics response of Multi degree freedom system using4. fundamental theory and experiments5. Differentiate the effects of various types of dynamic loads Use structural engineering software for dynamic analysis6. Perform & interpret the results of various experiments on models to understand structural behavior of symmetrical & un-symmetrical structures.
FEM125203	Design of High rise structures	<ol style="list-style-type: none">1. Analyze, design and detail Tall structures under different loading conditions by static and dynamic method of analysis.2. Use of computational software for analysis and design of high rise structures.3. Apply codal provisions for tall structures.4. Choose & apply appropriate structural systems for different size & height of structure Develop design basis report.5. Describe the design criteria and loading conditions for buildings.



FEM125204	Design Of Masonry Structure	<ol style="list-style-type: none">1. Apply knowledge of structural masonry for advanced research and construction procedures2. Justify the design of masonry buildings for sustainable development.3. Check the stability of walls.4. Distinguish from a wide range of materials for their suitability to arrive at feasible and optimal solutions for masonry constructions.
FEM125205	Design of Bridge Structures	<ol style="list-style-type: none">1. Analyze and design small to medium span of reinforced concrete slab culverts, T beam bridges as per IRC specifications2. Apply design principles of pre-stressed concrete T beam bridges, box girder bridges and balanced cantilever bridges.3. Use of computational software for analysis & design of bridges4. Choose & apply appropriate structural form for different span of bridges Develop design basis report.5. To familiarize with the usage of codal provisions in the design of bridges
FEM125206	Soil structure interaction	<ol style="list-style-type: none">1. Apply various theories applicable to SSI and will have capacity to idealize soil response in order to analyze and design rigid and flexible foundation elements subjected to different loadings.2. Calculate Contact pressure and settlement under shallow foundations, mat foundation, pile-raft foundation, settlement computation from constitutive laws.3. Analyze retaining structures through various analytical and graphical approaches, and design supporting structures for excavations4. Analyze sub-structural and super-structural element using various SSI tools based on hybrid models, discrete models and FEM approach and elastic theory approach.5. Analyze vertical piles, laterally loaded piles and pile-raft system and foundations subjected to dynamic forces/seismic forces.



FEM125207	Mini Project With Seminar	<ol style="list-style-type: none">1. Demonstrate a sound technical knowledge of their selected mini project topic.2. Undertake problem identification, formulation and solution.3. Design engineering solutions to complex problems utilizing a systems approach.4. Communicate with engineers and the community at large.5. Demonstrate the knowledge, skills and attitudes of a professional engineer.
Second Year Courses		
FEM135201	Internal Review 1	<ol style="list-style-type: none">1. The student can identify different areas of mid semester Thesis Progress Review.2. Can find the applications of all the areas in day to day life.
FEM135202	Dissertation Phase I	<ol style="list-style-type: none">1. At the end of the course, students will gain an experience in reviewing various research papers, understanding various newer concepts of problem solving and finalizing the topic related to the course for the work.
FEM135203	Industrial Safety	<ol style="list-style-type: none">1. Understand Importance of Safety and Important related Ac2. Apply Maintenance techniques as per requirements and able to compare for with different technique for better performance.3. Understand wear and corrosion, its causes and remedial actions for preventions.4. Demonstrate fault tracing, its methods and application.
FEM135204	Operation Research	<ol style="list-style-type: none">1. Students should able to apply the Liner programming techniques to solve problems of real life applications and carry out post optimality analysis.2. Students should able to apply the concepts of non-linear programming and apply them for real life problems.3. Students should able to obtain quantitative solutions in business decision making under conditions of certainty, risk and uncertainty4. Students should able to implement various scientific tools and models that are available in the subject to take decisions in a complex



		<p>environment.</p> <ol style="list-style-type: none">5. Develop linear programming (LP) models for shortest path, maximum flow, minimal spanning tree, critical path, minimum cost flow, and transshipment problems.
FEM135205	Design of Prestressed Concrete structures	<ol style="list-style-type: none">1. Analyze and design for flexure shear, bond and torsion2. Design of tension members3. Design of compression members with and without flexure4. Analysis and design of composite beams5. Understand design principles of the special prestressed structures like prestressed folded plates, prestressed cylindrical shells, and prestressed concrete poles.
FEM135206	Earthquake Resistant Design of structures	<ol style="list-style-type: none">1. Apply the concept of Earthquake Resistant Design & appraise the effect of structural & architectural irregularities of buildings.2. Determine the lateral loads on SDOF & MDOF structural system subjected to earthquake.3. Analyze RCC framed structures through Equivalent static force method - Response spectrum method for determining the lateral forces generated due to earthquake. Design & detailing of Multi-storey RC building using the available software.4. Appraise the concepts of ductile detailing for various structural elements in RC structures.5. Classify & describe various control systems & apply to framed structures.
FEM145201	Internal Review - 2	<ol style="list-style-type: none">1. The student can identify different areas of mid semester Thesis Progress Review.2. Can find the applications of all the areas in day to day life.
FEM145202	Dissertation Phase II	<ol style="list-style-type: none">1. The student can identify different areas of Dissertation Phase II.2. Can find the applications of all the areas in day to day life



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COURSE OUTCOME

FACULTY OF ENGINEERING



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Electrical Engineering

ME Electrical Engineering (ME)

Batch 2018-2023

Program Outcomes (PO)

Gokul Global University, Sidhpur



Program Outcomes (PO)

Me Electrical Engineering will be able to:

- PO-1:** An ability to independently carry out research/investigation and development work to solve practical problems.
- PO-2:** An ability to write and present a substantial technical report/document
- PO-3:** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program
- PO-4:** Graduates will be in a position to critically analyze complex engineering problems and provide feasible solutions considering cultural, societal and environmental factors
- PO-5:** Apply engineering and management principles as a team member and manage projects efficiently in multidisciplinary environments
- PO-6:** Graduates will exhibit the ability to engage in life-long learning with a high level of enthusiasm and commitment to imbibe knowledge and improve their professional standing



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Electrical Engineering

ME Electrical Engineering (ME)

Batch 2018-2023

Program Specific Outcomes (PSO)

Gokul Global University, Sidhpur



PROGRAM SPECIFIC OUTCOMES

- PSO-1:** Provide effective and efficient real time solutions to Electrical Engineering problems based on acquired knowledge so as to empower industry and society.
- PSO-2:** Enhance research skills to develop sustainable solutions to Complex Electrical and Electronic Engineering problems.
- PSO-3:** Acquire managerial skills and ethical values to develop oneself as a true leader and team player.



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Electrical Engineering

ME Electrical Engineering (ME)

Batch 2018-2023

Course Outcomes (CO)

Gokul Global University, Sidhpur



Course Outcome Semester-I ME Electrical		
Subject with code		Course Outcome
Numerical Techniques (FEM115301)	CO1	Select appropriate numerical methods to apply to various types of problems in Engineering.
	CO2	Apply the mathematics concepts underlying the numerical methods considered.
	CO3	Apply numerical methods to obtain approximate solutions to mathematical problems.
	CO4	Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.
Advanced Power Electronics (FEM115302)	CO1	To review basic concepts of power electronics in the field of power control and drives
	CO2	To address the underlying concepts and methods behind Advanced Power Electronics.
	CO3	To impart knowledge of power semiconductor technologies and their advancement in the field of power conversion.
	CO4	Competency in function of various power electronics devices
Computer Methods in Power System Analysis (FEM115303)	CO1	To analyze a Power System Network using graph theory.
	CO2	To construct the necessity of load flow studies and various methods of Analysis.
	CO3	Conclude methodologies of load flow studies for the power network.
	CO4	To examine short circuit analysis using Z bus.
Advanced Power System Protection and Switchgear (FEM115304)	CO1	To understand the types of Circuit breakers and relays for protection of Generators, Transformers and feeder bus bar from Over voltages.
	CO2	To describe the important of neutral grounding for overall protection.
	CO3	Understand the realization of over current, distance and differential relays using comparators.
	CO4	Explore filtering techniques, such as passive filters and active filters, for harmonic mitigation.
Electrical Drives (FEM115305)	CO1	Investigate dynamics of electrical drives, their nature and classification, applying concepts of steady-state stability and deriving condition for steady state operating point
	CO2	Applying concepts of steady-state stability and deriving condition for steady state operating point.
	CO3	Analyze induction motor equivalent circuit and torque-speed characteristics
	CO4	Illustrate control of slip ring induction motor (SLIM)



Research Skill and Methodology (FEM110001)	CO1	Conduct a quality literature review and find the research gap.
	CO2	Identify an original and relevant problem and identify methods to find its solution.
	CO3	Validate the model
	CO4	Present and defend the solution obtained in an effective manner in written or spoken form
Disaster Management (FEM110002)	CO1	Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
	CO2	Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
	CO3	Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations
	CO4	Critically understand the strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in

Course Outcome Semester-II ME Electrical		
Subject with code		Course Outcome
Research Paper Writing (FEM120001)	CO1	Understand that how to improve your writing skills and level of readability
	CO2	Learn about what to write in each section.
	CO3	Understand the skills needed when writing a Title.
	CO4	Ensure the good quality of paper at very first-time submission
Modern Control Systems (FEM125301)	CO1	Understand how the state space system representation provides an internal description of the system including possible internal oscillations or instabilities
	CO2	Design state observers.
	CO3	Place closed loop poles at desirable locations
	CO4	Derive the describing function for different types of non-linearities and then do the stability analysis.
Electrical Machine Modelling and Analysis (FEM125302)	CO1	To provide a fundamental understanding of the operation and classification of electrical machines.
	CO2	Explore dynamic equations that govern the transient response of electrical machines, including the study of startup, sudden load changes, and fault conditions.
	CO3	To teach methods for parameter estimation in machine modeling
	CO4	Introduce the concept of sensitivity analysis to evaluate the



		impact of variations in parameters on machine performance.
FACTS (PS) (FEB125303)	CO1	Analyze reactive power requirement and management.
	CO2	Assess and evaluate various compensators
	CO3	Simulate and design compensators
	CO4	Analyze various control schemes in HVDC system
Power System Management & Optimization (FEM125304)	CO1	Learn the unified and exact mathematical basis as well as the general principles of optimization techniques
	CO2	Understand detailed theoretical and practical aspects of application of optimization techniques
	CO3	Formulate deterministic mathematical programs and solutions for Power System applications
	CO4	Determine the operating condition of the power systems, in which optimization of some system variable are obtained
Advanced Power Convertors (FEM125305)	CO1	Simulate and design resonant converters.
	CO2	Select and design the appropriate phase shifting converter for a multi-pulse converter.
	CO3	Evaluate various multi-level inverter configurations and design control schemes for them.
	CO4	Apply the knowledge of power electronic converters in the area of Power Systems, Renewable Energy Sources and other industrial applications.
Advanced Electrical Drives (FEM125306)	CO1	Model any electrical machine given its parameters.
	CO2	Perform the steady state & transient analysis of electrical machines.
	CO3	Apply theoretical concepts in modeling of conventional electrical machines.
	CO4	Analyze electrical machines' performance/behaviour for different operating conditions
Artificial Intelligent Application to Power System (FEM125307)	CO1	Understand how the soft computing techniques can be used for solving the problems of power systems operation and control
	CO2	Design of ANN based systems for function approximation used in load forecasting.
	CO3	Design of Fuzzy based systems for load frequency control in power systems.
	CO4	Solve problem of Optimization in power systems.
Modern Power System Protection (FEM125308)	CO1	To operate various static relays, set their parameters and also to confirm its operations
	CO2	To operate various Numeric relays, set their parameters and also to confirm its operations.
	CO3	Implement various protection schemes and use modern approaches of relaying in power system protection



	CO4	Analyze the tripping characteristics of various relays and its applications. Design inductors and transformers for power electronic converters
Application Of Power Electronics to Power System (FEM125309)	CO1	Analyze reactive power requirement and management
	CO2	Assess and evaluate various compensators
	CO3	Simulate and design compensators
	CO4	Analyze various control schemes in HVDC system
Industrial Electronics and Instrumentation (FEM125310)	CO1	Understand the role of industrial electronics in automation, control, and instrumentation.
	CO2	Familiarize students with electronic components and devices used in industrial applications.
	CO3	Explore various types of sensors and transducers used for measuring physical parameters in industrial processes.
	CO4	Introduce signal conditioning techniques for preparing sensor signals for further processing.

Course Outcome Semester-III ME Electrical		
Subject with code		Course Outcome
Dissertation Phase-II (FEM135301)	CO1	This phase aims to help students identify a research area, formulate research questions, and develop a clear and feasible research proposal.
	CO2	To conduct a thorough literature review related to the chosen research topic
	CO3	The course may include discussions on ethical principles and guidelines to ensure that students conduct their research with integrity and adhere to ethical standards.
	CO4	Opportunities for students to collaborate, share insights, and provide constructive feedback to peers may be included, creating a supportive research community.
Internal Review-I (FEM135302)	CO1	To incorporate feedback received during Internal Review-I.
	CO2	Students are guided to refine their research methodologies, addressing any weaknesses or limitations identified during the Internal Review-II
	CO3	The course may include opportunities for students to present their research progress to faculty and peers, improving their ability to effectively communicate their research findings.
	CO4	Students are encouraged to identify any challenges or obstacles encountered during the research process and seek guidance on overcoming these challenges.
Power System Dynamics and Control (FEM135303)	CO1	Understand the dynamic behavior of synchronous machines, generators, and other components.
	CO2	Understand the parameters and characteristics that



		influence the dynamic response.
	CO3	Introduce power system control devices, including governors, excitation systems, and automatic voltage regulators (AVRs).
	CO4	Explore different control strategies used in power systems.
Power Quality Issues and Their Mitigation Techniques (FEM135304)	CO1	Understand the causes and effects of each type of power quality problem.
	CO2	Familiarize students with international standards and regulations related to power quality.
	CO3	Understand the use of voltage regulators, static compensators, and other devices to stabilize voltage levels.
	CO4	Explore filtering techniques, such as passive filters and active filters, for harmonic mitigation.
Advanced Control Techniques for Electrical Machines (FEM135305)	CO1	Understand the mathematical representations and dynamics of electrical machines.
	CO2	Understand the benefits and challenges of using nonlinear control to address system nonlinearities.
	CO3	Develop dynamic models for different types of electrical machines, including induction motors, synchronous motors, and permanent magnet motors.
	CO4	Explore the principles and applications of Model Predictive Control (MPC) in the context of electrical machines.
Modelling And Analysis of Power Converters (FEM135306)	CO1	Understand how small disturbances affect the stability and performance of converters
	CO2	Explore control techniques used in power converters, including open-loop and closed-loop control.
	CO3	Understand how feedback control improves the performance and stability of converters.
	CO4	Understand how switching frequency and modulation affect the performance of converters.
Economics Of Energy Generation & Supply (FEM135307)	CO1	Students will demonstrate a deep understanding of fundamental concepts and principles in energy economics, including supply and demand dynamics, market structures, and economic drivers in the energy sector.
	CO2	Students will be able to analyze energy markets, including electricity and commodity markets, and understand pricing mechanisms, market structures, and factors influencing energy prices.
	CO3	Understand the factors influencing the cost of electricity production
	CO4	Understand how to assess the economic viability and return on investment for energy generation projects.
Digital Signal Processing for	CO1	Understand the basics of power diodes, power bipolar



Power Electronics (FEM135308)		junction transistors, metal oxide semiconductor field effect transistor, insulated gate bipolar transistors.
	CO2	Students will get the idea of various power converter topologies like buck, boost, buck-boost, cook, half bridge and full bridge
	CO3	Students will be able to generate pulse width modulated output using TMS320F2407/28335 high performance DSP. Students will also get familiar with various applications of power electronics and integration of solar photovoltaic system with power converters to produce electrical energy from light
	CO4	Understand the application of adaptive algorithms for enhancing system performance

Course Outcome Semester-IV ME Electrical		
Subject with code		Course Outcome
Dissertation Phase-II (FEM145301)	CO1	To provide students with the opportunity to continue and complete the research initiated in Dissertation Phase-II.
	CO2	Students are expected to collect relevant data according to the research plan developed in Phase-II and perform comprehensive data analysis using appropriate methodologies
	CO3	Based on the feedback received during the Phase-I presentation, students should refine their research methodology, addressing any identified weaknesses or limitations.
	CO4	To address any challenges or issues encountered during the research process.
Internal Review-II (FEM145302)	CO1	Faculty advisors or review committees review the students' research work to evaluate the depth and quality of their research progress since the previous review.
	CO2	Students are guided to refine their research methodologies, addressing any weaknesses or limitations identified during the Internal Review-II
	CO3	The course may include opportunities for students to present their research progress to faculty and peers, improving their ability to effectively communicate their research findings.
	CO4	Emphasis is placed on maintaining accurate and organized records of research activities, data, and methodologies.



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COURSE OUTCOME

FACULTY OF ENGINEERING



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M.E.
Master of Engineering (M.E.)
Computer Engineering
Program Outcomes (PO)



For the implementation of an outcome-based education the first requirement is to develop an outcome based curriculum and incorporate an outcome-based assessment in the education system. By going through outcome-based assessments, evaluators will be able to evaluate whether the students have achieved the outlined standard, specific and measurable outcomes. With the proper incorporation of outcome-based education there will be a definite commitment to achieve a minimum standard for all learners without giving up at any level. At the end of the programme running with the aid of outcome-based education, a student will be able to arrive at the following outcomes:

PO1. An ability to independently carry out research /investigation and development work to solve practical problems [Problem Solving and Research Skill]

PO2. An ability to write and present a substantial technical report/document [Communication]

PO3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program [Lifelong Learning]

PO4. An ability to apply advanced knowledge and skills appropriate to the discipline. [Scholarship of knowledge]

PO5. An ability to think critically and apply appropriate logic, analysis, judgment and decision making and to function as an effective member or leader of engineering teams to achieve common goals. [Collaborative and Multidisciplinary work]

PO6. An ability to use appropriate techniques, skills, and modern engineering tools necessary for engineering practice and commit to professional ethics and responsibilities [Usage of Modern Tools , Ethical Practices and Social Responsibility]



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M.E.

Master of Engineering (M.E.)

Computer Engineering

Program Specific Outcomes (PSO)



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Information Technology Programme Students will be able to:

PSO1 Develop software applications/solutions as per the needs of Industry and society

PSO2 Adopt new and fast emerging technologies in computer science and engineering.



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M.E.

Master of Engineering (M.E.)

Computer Engineering

Course Outcomes (CO)



Students of all under graduate Master degree programs at the time of graduation will be able to learn:

Course Outcomes Semester-I M.E.		
Subject with code		Course Outcome
FEM115401: Mathematical Foundation Of Computer Science	CO 1	Ability to apply mathematical logic to solve problems.
	CO 2	Understand sets, relations, functions and discrete structures.
	CO 3	Able to use logical notations to define and reason about fundamental mathematical concepts such as sets relations and functions.
	CO 4	Able to formulate problems and solve recurrence relations.
	CO 5	Able to model and solve real world problems using graphs and trees
FEM215402: Advanced Data Structure	CO 1	Understand the implementation of symbol table using hashing techniques.
	CO 2	Develop and analyze algorithms for red-black trees, B-trees and Splay trees.
	CO 3	Develop algorithms for text processing applications.
	CO 4	Identify suitable data structures and develop algorithms for computational geometry problems.
	CO 5	Basic ability to analyse algorithms and to determine algorithm correctness and time efficiency class.
	CO 6	Ability to apply and implement learned algorithm design techniques and data structures to solve problems.
FEM115404: Data Science	CO 1	Understand fundamental algorithmic ideas to process data
	CO 2	Identify and apply various machine learning models
	CO 3	Demonstrate and understand role of R programming in data science
	CO 4	Apply the knowledge of python based data visualization
	CO 5	Understand Map Reduce framework and HDFS in Hadoop
	CO 6	Demonstrate various documentation techniques
FEM115406: Machine Learning	CO 1	Identify the different machine learning approaches for supervised learning
	CO 2	Analyze the different dimensionality reduction techniques available
	CO 3	Identify the different classifier models suitable for machine learning
	CO 4	Examine different approaches for training neural network and decision tree learning
	CO 5	Enumerate the working of classifier models like Support



		Vector Machine and Hidden Markov Models
	CO 6	Identify and apply different clustering algorithms in real life problems
FEM110001: Research Skill & Methodology	CO 1	Conduct a quality literature review and find the research gap.
	CO 2	Identify an original and relevant problem and identify methods to find its solution.
	CO 3	Validate the model
	CO 4	Present and defend the solution obtained in an effective manner in written or spoken form
	CO 5	Take up and implement a research project/ study.
FEM110002: Disaster Management	CO 1	Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
	CO 2	Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
	CO 3	Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
	CO 4	Critically understand the strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in.
	CO 5	Understand impact of Disasters and realization of societal responsibilities.
	CO 6	Apply Disaster management principles.
Course Outcomes Semester-II M.E.		
FEM225401: Advanced Algorithm	CO 1	Formulate and analyses the algorithms and respective complexities
	CO 2	Demonstrate a familiarity with major algorithms and data structures.
	CO 3	Analyze and Implement the examples of different types of problems.
	CO 4	Categorization of problems on the basis of implementation.
	CO 5	Synthesize efficient algorithms in common engineering design situations.
	CO 6	Redefine the existing algorithm to improve the efficiency.
FEM125402: Image Processing	CO 1	Students will be able to compare different methods for image acquisition, storage and representation in digital



		devices and computers.
	CO 2	Students will be able to appreciate role of image transforms in representing, highlighting, and modifying image features.
	CO 3	Students will be able to interpret the mathematical principles in digital image enhancement and apply them in spatial domain and frequency domain
	CO 4	Students will be able to apply various methods for segmenting image and identifying image components.
	CO 5	Students will be able to summarize different reshaping operations on the image and their practical applications.
	CO 6	Students will be able to identify image representation techniques that enable encoding and decoding images.
FEM125404: Data Mining And Data Warehousing	CO 1	Understand the data Warehouses, Operational Data Stores (ODS) and OLAP characteristics.
	CO 2	Understand the data mining concept, application and their usage.
	CO 3	Analyze the frequent patterns using association analysis algorithms like apriori, FP-growth etc.
	CO 4	Understand the concept of classification, different classification algorithms and their applications.
	CO 5	Understand the concept of clustering and different cluster analysis methods.
FEM125406: Service Oriented Architecture	CO 1	Understand the concepts of Service Oriented Architecture along with the evolution of SOA
	CO 2	Understand primary concepts of SOA
	CO 3	Know the integration of SOA technological points with Web Services.
	CO 4	Implementation of SOA in development cycle of Web Services.
	CO 5	Integrate SOA technologies with Web Services paradigms.
	CO 6	Can learn the reference model of Service Oriented base line backend design for Cloud environment.
FEM125409: Mini Project With Seminar	CO 1	Demonstrate a sound technical knowledge of their selected mini project topic.
	CO 2	Undertake problem identification, formulation and solution.
	CO 3	Design engineering solutions to complex problems utilizing a systems approach.
	CO 4	Communicate with engineers and the community at large.



	CO 5	Demonstrate the knowledge, skills and attitudes of a professional engineer.
FEM120001: Research Paper Writing	CO 1	Understand that how to improve your writing skills and level of readability.
	CO 2	Learn about what to write in each section.
	CO 3	Understand the skills needed when writing a Title.
	CO 4	Ensure the good quality of paper at very first-time submission
	CO 5	Relate the quantum concepts in electron microscopes
	CO 6	Describe the unit cell characteristics and the growth of crystals
Course Outcomes Semester-III M.E.		
FEM135402: Cloud Computing	CO 1	Understand the concepts and terminologies of Cloud computing and virtualization
	CO 2	Understand the Cloud computing architecture and the Aneka cloud computing platform.
	CO 3	Understand programming applications with Thread and Task-based application models.
	CO 4	Understand Data intensive computing and Map-Reduce programming model.
	CO 5	Understand the Cloud platforms in industry such as Amazon web services, Google AppEngine, Microsoft Azure and Cloud scientific applications.
FEM135404: Semantic Web	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables
	CO 4	Mathematics has the potential to understand the core Technological studies
	CO 5	To compute the areas and volumes using multiple integral techniques
	CO 6	To perform matrix computation in a comprehensive



		manner
FEM135408: Dissertation Phase - I	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables
	CO 4	Mathematics has the potential to understand the core Technological studies
	CO 5	To compute the areas and volumes using multiple integral techniques
	CO 6	To perform matrix computation in a comprehensive manner
Course Outcomes Semester-IV M.E.		
FEM145402: Dissertation Phase - II	CO 1	To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions
	CO 2	To apply the various tests of convergence to sequence, series and the tool of power series and Fourier series for learning advanced Engineering Mathematics
	CO 3	To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables
	CO 4	Mathematics has the potential to understand the core Technological studies
	CO 5	To compute the areas and volumes using multiple integral techniques
	CO 6	To perform matrix computation in a comprehensive manner



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COURSE OUTCOME

FACULTY OF ENGINEERING



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**MASTER OF ENGINEERING (ME)
(ENVIRONMENTAL ENGINEERING)**

Batch: 2022-2023

Program Outcomes (POs)

**GOKUL GLOBAL UNIVERSITY,
SIDHPUR, GUJARAT.**



Students of all postgraduate Environmental Engineering degree programs at the time of post graduation will be able to learn:

- PO-1.** Apply the mathematics, science and engineering principles to understand the environmental issues and challenges.
- PO-2.** Understand, identify, formulate and solve various environmental engineering problems.
- PO-3.** Modelling environmental systems using modern tools and techniques.
- PO-4.** Use modern engineering tools, software and equipment to analyze problems.
- PO-5.** Introduce the principles and concepts of various aspects of sustainable development elements in the design and development projects or activities.
- PO-6.** Pursue life-long learning as a means of enhancing the knowledge and skills in treatment technologies and management practices.
- PO-7.** Enhance communication skill & successfully apply research aptitude among student to R&D activities & consultancy works.



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MASTER OF ENGINEERING (ME) (ENVIRONMENTAL ENGINEERING)

Batch: 2022-2023

Program Specific Outcomes (PSOs)



Students after the completion of post-graduation in degree Environmental Engineering program able to:

PSO-1. Design a system, component and/or process as per needs of the project with appropriate consideration for the environmental impact, public health and safety.

PSO-2. Understand and assess the impact of engineering projects and solutions on the environment and society assess the potential environmental impacts of development projects and design mitigation measures.

PSO-3. Independently carry out research / investigation to solve practical problems and write / present a substantial technical report / document.



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MASTER OF ENGINEERING (ME) (ENVIRONMENTAL ENGINEERING)

Batch: 2022-2023

Course Outcomes (COs)



Students of all postgraduate Environmental Engineering degree programs at the time of post-graduation will be able to learn:

Course Outcomes Semester-I M. E. Environmental Engineering		
Subject with Code		Course Outcome
Research Skill & Methodology (FEM110001)	CO1	Conduct a quality literature review and find the research gap.
	CO2	Identify an original and relevant problem and identify methods to find its solution.
	CO3	Validate the model.
	CO4	Present and defend the solution obtained in an effective manner in written or spoken form.
	CO5	Take up & implement a research project/study.
Disaster Management (FEM110002)	CO1	Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
	CO2	Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
	CO3	Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
	CO4	Critically understand the strengths & weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in.
	CO5	Understand impact of Disasters and realization of societal responsibilities.
	CO6	Apply Disaster management principles.
Analytical Method & Instrumentation in Environmental (FEM115701)	CO1	Able to understand the fundamental characteristics, terminologies, sensing and transduction principles various types of sensors and transducers used in environment monitoring.
	CO2	Able to justify the use of an analytical instrument for monitoring and maintaining the quality of water and air in solving real world environmental problem.
	CO3	Able to summarize and classify capabilities and



		limitations of analytical instruments.
	CO4	Able to prepare a report on various cases of environmental parameters monitoring and control.
	CO5	Perform hands-on experiments and computations relevant to Environmental engineering.
Fundamentals of water & wastewater treatment (FEM115702)	CO1	Describe various types of process units used for preliminary and primary treatment, e.g. screening, equalization, primary settling and explain their functions.
	CO2	Describe and explain how biological wastewater treatment removes pollutants.
	CO3	Describe various biological wastewater treatment processes and recognize pros and cons of each process.
	CO4	Explain the principles of the suspended and attached growth biological processes and the factors that influence and control these processes.
	CO5	Describe a disinfection process in terms of contact time and chemicals usage.
	CO6	Discuss wastewater treatment excess sludge handling, treatment, disposal and bio solids applications.
Collection & Conveyance of Water & Waste Water (FEM115703)	CO1	Select or construct appropriate treatment schemes to remove certain pollutants present in water or wastewater.
	CO2	Design a water or wastewater treatment component.
	CO3	Balance chemical reactions and use balanced reactions to determine the distribution of species at equilibrium.
	CO4	Learn how to characterize source water, and the best Department Syllabus available technologies (BAT) for physical and chemical treatment of drinking water.
	CO5	Learn how to characterize wastewater, and the BAT for physical, chemical and microbiological treatment of wastewater
	CO6	Understand selected contemporary global water and wastewater issues such as water shortage, wastewater reuse and emerging contaminants.
Environmental Monitoring (FEM115704)	CO1	Describe the need and importance of environmental monitoring in environmental engineering field and problems associated with it.
	CO2	Identify the pros and cons of various approaches to



		monitoring the environmental data.
	CO3	Use sampling techniques.
	CO4	Prepare different solutions during analytical procedures for determination of water and air pollutants content.
	CO5	Prepare and interpret monitoring report/s.
Environmental Impact Assessment (FEM115705)	CO1	Prepare portions of environmental documents through administrative and legal Requirements and standards of professional practice.
	CO2	Fully participate in interdisciplinary environmental report preparation teams.
	CO3	Critically review an EIA document for completeness and adequacy.
	CO4	Analyze proposed development project plans for possible environmental effects and prepare appropriate initial studies.
	CO5	Utilize EIA documents for policy development, project planning or for legal or political action planning.
	CO6	Illustrate the necessity of public participation in EIA studies.
Environmental Management System (FEM115706)	CO1	Acquainted with the environmental management system and its benefits.
	CO2	Able to identify and review audit-related documents, prepare checklists and audit process
	CO3	Able to apply tools such as life cycle assessment, environmental audits.
	CO4	Able to evaluate environmental performance and environmental decision-making.
	CO5	To evaluate the effectiveness of systematic environmental monitoring processes.
Course Outcomes Semester-II M. E. Environmental Engineering		
Subject with Code		Course Outcome
Research Paper Writing (FEM120001)	CO1	Understand that how to improve your writing skills and level of readability.
	CO2	Learn about what to write in each section.



	CO3	Understand the skills needed when writing a Title.
	CO4	Ensure the good quality of paper at very first-time submission
	CO5	Relate the quantum concepts in electron microscopes
	CO6	Describe the unit cell characteristics and the growth of crystals.
Air & Noise Pollution: Analysis, Treatment & Management (FEM125701)	CO1	Evaluate the impacts of air pollution on human, vegetation and animal.
	CO2	Prepare plan strategies to control and reduce air pollution.
	CO3	Identify the sources of air and noise pollution.
	CO4	Monitor the ambient air quality.
	CO5	Understand the concepts involved in control technologies.
	CO6	Identify the sources of vehicular pollution & prevention
Solid & Hazardous Treatment & Management (FEM125702)	CO1	Classify & identify of sources of solid waste.
	CO2	Understand various physical, chemical and biological characteristics of solid waste and know the generation rates of various solid waste.
	CO3	Describe the major environmental problems caused by in appropriate production and disposal of solid by-products manufacturing and consumption.
	CO4	Analyze the role of regulatory systems in solid hazardous wastes management.
	CO5	Assess hazardous & solid treatment and disposal.
	CO6	Assess and design waste recycling, reuse, recover treatment and disposal.
Environmental Audit (FEM125703)	CO1	define environmental auditing and describe the main components of the environmental auditing Process.
	CO2	Identify methods for auditing specific environmental issues associated with the activities of an organization and product/service.
	CO3	Describe the main components of an enviro management system.
	CO4	Understand key principles underpinning a ra environmental management tools & techniques.



	CO5	Assess critically the use and application of environmental auditing and management tools.
	CO6	Understand the activities in environmental auditing.
Environmental Modeling and Computational Methods (FEM125704)	CO1	Understand the idea, methodology and basic tools of environmental modeling.
	CO2	Understand the different modeling approaches, their scope and limitations.
	CO3	Apply the Knowledge of computing techniques in environmental engineering.
Environmental Legislation and Management (FEM125705)	CO1	Provide definitions of environment, management, system organizations in relation to environmental management.
	CO2	Describe organizations as systems and their role in environmental management.
	CO3	Understand the usefulness of systems thinking in relation to environmental management in organizations.
	CO4	Explain how environmental management can be used for environmental protection and how organizations can identify and manage risk.
	CO5	Apply the Knowledge of ISO 14000 for obtaining certification.
Fundamental of Sustainable Development & Cleaner Production Mechanism (FEM125706)	CO1	To examine the technical points that are required to set up an integrated solid waste management system.
	CO2	To evaluate the existing water treatment system and harvesting methods for water conservation
	CO3	To study reuse, recycle and reclamation of wastewater.
	CO4	To analyse the existing EMS and check the feasibility of cleaner production in industries at macro level for abatement of pollution.
	CO5	Introduced solid waste treatments techniques & current issues of SWM.
	CO6	Illustrate the cleaner production & technology.
Mini Project with Seminar (FEM125707)	CO1	Identify engineering problems reviewing available literature.
	CO2	Study different techniques used to analyze complex systems.



	CO3	Solve a live problem using software/ analytical computational tools and present solution by using his/his technique applying engineering principles.
	CO4	Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.
Course Outcomes Semester-III M. E. Environmental Engineering		
Subject with Code		Course Outcome
Internal Review – 1 (FEM135701)	CO1	The student can identify different areas of mid semester Thesis Progress Review.
	CO2	Can find the applications of all the areas in day to day life.
Dissertation Phase - I (FEM135702)	CO1	At the end of the course, students will gain an experience in reviewing various research papers, understanding various newer concepts of problem solving and finalizing the topic related to the course for the work.
Industrial Safety (FEM135703)	CO1	Understand Importance of Safety and Important related Accident & electrical hazards.
	CO2	Apply Maintenance techniques as per requirements and able to compare for with different technique for better performance.
	CO3	Understand wear and corrosion, its causes and remedial actions for preventions.
	CO4	To evaluate the effectiveness of systematic EMS monitoring processes. Demonstrate fault tracing, its methods and application.
	CO5	Understand Importance of Periodic and preventive maintenance.
	CO6	Understand the methods of hazard identification and preventive measures.
Waste to Energy (FEM135704)	CO1	Understand about Agriculture waste, Industrial waste and their conversion process.
	CO2	Design construction and operation of Gasifiers.
	CO3	Design construction and operation of Bio combustors.
	CO4	Applications of Biomass.
Advanced Wastewater Treatment Technologies (FEM135705)	CO1	Apply advanced technologies in Wastewater treatment.
	CO2	Select the most appropriate types of membrane process for tertiary treatment of wastewater.



	CO3	Apply advanced oxidation processes to treat concentrated non-biodegradable wastewater.
	CO4	Apply tertiary treatment processes like adsorption, exchange for optimum removal of pollutants.
	CO5	Apply advanced oxidation processes to treat concentrated biodegradable wastewater.
	CO6	Apply advanced filtration processes.
Urban Environment & Sustainability (FEM135706)	CO1	To study basic concept of sustainability and urban development.
	CO2	To study the environmental urban issues and management.
	CO3	Prepare plan strategies to control and reduce Urban environmental pollution.
Course Outcomes Semester-IV M. E. Environmental Engineering		
Subject with Code		Course Outcome
Internal Review – II (FEM145701)	CO1	The student can identify different areas of mid semester Thesis Progress Review.
	CO2	Can find the applications of all the areas in day to day life.
Dissertation Phase -II (FEM145702)	CO1	The student can identify different areas of Dissertation Phase II.
	CO2	Can find the applications of all the areas in day-to-day life.



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COURSE OUTCOME

FACULTY OF ENGINEERING



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Master of Engineering (Transportation)

Civil Engineering



PROGRAM OUTCOMES (PO)

- PO 1: Able to recognize, devise and solve intricate transportation problems and research need.
- PO 2: Able to plan, design and implement safe, efficient, cost effective, sustainable transportation projects to meet societal and environmental needs.
- PO 3: Able to intend and conduct multifarious transportation engineering experiments, surveys as well as to analyze and interpret the experimental/collected data.
- PO 4: Able to understand and apply engineering and management principle in executing projects.
- PO5: Demonstrate skill for planning, design, construction and maintenance of transportation projects.
- PO6: Assessment of environmental and its allied issues to the construction of the transportation projects
- PO7: Demonstrate skills to use modern engineering tools, software and equipment's to analyze problems and evolve solutions
- PO8: To enhance communication skills and successfully apply research aptitude among students to R&D activities and consultancy works.



PROGRAMSPECIFICOUTCOMES

PSO 1: Study of transportation engineering provides opportunity for understanding the transportation tribulations and detection of the needs.

PSO 2: To learn a safe, resourceful, cost effective, sustainable transportation system through the land-use transportation planning, road network planning, design, construction, management and environmental protection measures.

PSO 3: Able to exercise the techniques, skills and modern engineering tools necessary for transportation engineering practices.



COURSEOUTCOMES

On completion of the course students will be able to

Course Code	Course Name	Course Outcome
(Semester-I)		
FEM110001	Research Skill And Methodology	<ol style="list-style-type: none">1. Conduct a quality literature review and find the research gap.2. Identify an original and relevant problem and identify methods to find its solution3. Validate the model4. Present and defend the solution obtained in an effective manner in written or spoken form
FEM110002	Disaster Management	<ol style="list-style-type: none">1. Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response2. Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.3. Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations
FEM115801	Highway Material and Construction Techniques	<ol style="list-style-type: none">1. Understand the properties of the highway material, their testing and change in behavior in reference to changing climatic parameters. Study horizontal and vertical alignment, including super elevation, which comply standards as per IRC.2. Design rigid and flexible pavements which comply with IRC: 37 standards, and factor influencing their maintenance.
FEM115802	Traffic Engineering & Road Safety	<ol style="list-style-type: none">1. To provide detailed knowledge of traffic flow characteristics, measurement techniques and analysis.2. To train the students, how to find the highway capacity and level of service.3. To make aware of traffic planning, design and management techniques and impacts of traffic.4. To impart the concepts of design of traffic control devices and traffic infrastructures.
FEM115803	Numerical Methods And Statical Analysis	<ol style="list-style-type: none">1. Select appropriate numerical methods to apply to various types of problems in engineering.2. Apply the mathematics concepts underlying the numerical methods considered.3. Apply numerical methods to obtain approximate solutions to mathematical problems Carry out interpolations and curve fitting.4. Obtain solution of Eigen value problems and Fourier series for structural analysis5. Students will learn fundamentals and applications of probability for engineering problems.



FEM115804	Highway Geometric Design	<ol style="list-style-type: none">1. Design the longitudinal and cross-Sectional elements of a highway.2. Design the intersections, interchanges3. Design the facilities for bicyclists and pedestrians.4. Design SSD and OSD.5. Design Horizontal and vertical curves6. Design of intersections.
FEM115805	Intelligent Transportation System	<ol style="list-style-type: none">1. Understand ITS & ATIS2. Explain about Advanced Transportation Management System.3. Know about APTS, CVO, new technology and ETC4. Details about regional architecture, integration of infrastructure and Operational planning5. Summarizes about ITS issues in terms of various factors and emerging issues
FEM115804	Rail Transportation System Planning and Design	<ol style="list-style-type: none">1. To enhance the knowledge of Railway Engineering in the context of regional mass transportation systems.2. To provide techniques of planning, modeling and designing the transportation systems along with infrastructures required for Railways.3. To make the students aware of the environmental and other impacts impended due to Railway projects.
Semester 2		
FEM120001	Research Paper Writing	<ol style="list-style-type: none">1. Understand that how to improve your writing skills and level of readability.2. Learn about what to write in each section.3. Understand the skills needed when writing a Title.4. Ensure the good quality of paper at very first-time submission5. Relate the quantum concepts in electron microscopes
FEM125801	Pavement Design and Evaluation	<ol style="list-style-type: none">1. To analyze stresses in pavements from given details, information and data set and able to present frameworks for mechanistic-empirical design methods for pavements.2. To design different types of pavements using standard procedures and have knowledge of failures in pavements and their preventive measures.3. To describe various methods of construction of different types of roads and their components, specifications and tests.4. To assess the problems / causes of failures in road construction in specific conditions and suggest preventive measures thereof.5. To explain techniques to evaluate strength and serviceability of pavements, evaluation techniques of pavements, describe techniques of maintenance and strengthening, and suggest remedies.



FEM125802	Traffic Flow Theory and Management	<ol style="list-style-type: none">1. To understand and classify the traffic stream characteristics models.2. To develop the relationship of fundamental stream characteristics through real field data.3. To analyze and estimate the traffic delay due to incidents or at toll plaza using the fundamental queuing theory.4. To access the LoS of the highway segments through the traffic stream data.5. To create or generate the vehicles through simulation or software for given characteristics and should conclude the result.
FEM125803	Airport Planning and Design	<ol style="list-style-type: none">1. Develop the knowledge of Airport Engineering in the context of regional mass transportation systems.2. Design of Air transportation systems along with infrastructures required for Airports.3. Estimate the environmental and other impacts impended due to Airport projects.4. Design of runway, taxiway, aprons and cargo facilities with pavement design.5. Design of parking configurations and apron facilities at Airport.
FEM125804	Docks and Harbour Engineering	<ol style="list-style-type: none">1. To create an awareness about Docks and Harbour Engineering for the water transportation in the context of regional and intercontinental transportation.2. To know techniques of planning and designing the infrastructures required for Harbour and Port area.3. To understand an impact of various natural phenomena on design of port structure and components of harbour infrastructure.4. To forecast cargo and passenger demand, cargo handling capacity of ports and economic evaluation of port project.5. To determine an impact of water transportation and port activities on environment.
FEM125805	Public Transportation Planning	<ol style="list-style-type: none">a. To understand the historical growth in public transportation systems, their operation, planning and economics.b. To plan transit network, define principles of transit network, classify transit types, geometry and characteristics, transit routes and their characteristics.c. To apply problems of transit routing, scheduling, infrastructure facilities, fare structures and management.d. To design transit infrastructure facilities like bus stops, rail transit stops, design of terminals, layout of depot and location. <ol style="list-style-type: none">2. To know organizational structure of transit agency, management and personnel, transit system statistics, performance and economic measures, operations, fare structure.



FEM125806	Application of GIS and RS for Transportation	<ol style="list-style-type: none">1. To learn the basic concepts of geo-informatics in brief that includes Geographical Information System (GIS), Remote Sensing (RS), and Global Positioning System (GPS).2. To understand these basic concepts in context of transportation and transportation networks.3. To learn the data needs and database development for doing transportation analysis in GIS environment.4. To understand the concepts of transportation networks and algorithms and how they are incorporated into GIS.5. To understand how GIS processes can be used for efficient transportation modeling and analysis.
FEM125807	Behavioral Travel Modelling	<ol style="list-style-type: none">1. To identify suitable type of survey to be conducted for measuring behavioral aspect and identify the type of model for the collected data2. To analyze travel surveys and their role in transport planning.3. To evaluate the theoretical framework and random utility theory in which the discrete choice models are cast.4. To evaluate the theoretical framework and random utility theory in which the discrete choice models are cast.5. To validate the collected sample data with statistical checks.
FEM125808	Economic Evaluation of Transportation Projects	<ol style="list-style-type: none">1. To identify and evaluate the demand and utility for transport project2. To prepare an alternative strategy for stage construction or full construction;<ol style="list-style-type: none">a. To analyze future cash flows considering all the consequences and how It can be brought under a common time datum without extending period beyond reliable forecasts3. To evaluate the project economics strength using different methods for economic evaluation.4. To examine the viability of transportation project through economic and financial analysis of transportation
FEM125809	Mini Project with Seminar	<ol style="list-style-type: none">1. Identify engineering problems reviewing available literature.2. Study different techniques used to analyze complex systems.3. Solve a live problem using software/analytical/computational tools and present solution by using his/her technique applying engineering principles.4. Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.
Semester 3		
FEM135801	Internal Review -I	<ol style="list-style-type: none">1. Identify engineering problems reviewing available literature.2. Study different techniques used to analyze complex systems.3. Solve a live problem using software/ analytical/ computational tools and present solution by using his/her technique applying engineering principles.4. Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.



FEM135802	Dissertation Phase - I	<ol style="list-style-type: none">1. Identify engineering problems reviewing available literature.2. Study different techniques used to analyze complex systems.3. Solve a live problem using software/ analytical/ computational tools and present solution by using his/her technique applying engineering principles.4. Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.
FEM135803	Cost Management of Engineering Projects	<ol style="list-style-type: none">1. Understand the concept of strategic cost management, strategic cost analysis – target costing, life cycle costing and Kaizen costing and the cost drive concept.2. Describe the decision-making; relevant cost, differential cost, incremental cost and opportunity cost, objectives of a costing system.3. Understand the meaning and different types of project management and project execution, detailed engineering activities.4. Understand the project contracts, cost behavior and profit planning types and contents, Bar charts and Network diagram.5. Analyze by using quantitative techniques for cost management like PERT/CPM.
FEM135804	Industrial Safety	<ol style="list-style-type: none">1. Understand Importance of Safety and Important related Acts.2. Apply Maintenance techniques as per requirements and able to compare for with different technique for better performance.3. Understand wear and corrosion, its causes and remedial actions for preventions.4. Demonstrate fault tracing, its methods and application.
FEM135805	Operation Research	<ol style="list-style-type: none">1. Students should able to apply the Linear programming techniques to solve problems of real-life applications and carry out post optimality analysis.
Semester 4		
FEM145801	Internal Review -II	<ol style="list-style-type: none">1. Identify engineering problems reviewing available literature.2. Study different techniques used to analyze complex systems.3. Solve a live problem using software/ analytical/ computational tools and present solution by using his/her technique applying engineering principles.4. Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.
FEM145802	Dissertation Phase - II	<ol style="list-style-type: none">1. Identify engineering problems reviewing available literature.2. Study different techniques used to analyze complex systems.3. Solve a live problem using software/ analytical/ computational tools and present solution by using his/her technique applying engineering principles.4. Learn to write technical reports and develop skills to present and defend their work in front of technically qualified audience.



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BACHELOR OF COMPUTER APPLICATIONS(BCA)

Program Outcomes (PO)



Program Outcomes (PO)

After the completion of the course, the student will attain the ability to:

PO 1. Computational Knowledge: Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.

PO 2. Problem Analysis: Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.

PO 3. Design /Development of Solutions: Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO 4. Conduct investigations of complex computing problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5. Modern Tool Usage: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

PO 6. Professional Ethics: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.

PO 7. Life-long Learning: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

PO 8. Project management and finance: Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 9. Communication Efficacy: Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

PO10. Societal and Environmental Concern: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.

PO 11. Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

PO 12. Innovation and Entrepreneurship: Identify a timely opportunity and use innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.



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BACHELOR OF COMPUTER APPLICATIONS(BCA)

Program Specific Outcomes (PSO)



Program Specific Outcomes (PSO)

To produce employable IT workforce, that will have sound knowledge of IT and business fundamentals that can be applied to develop and customize solutions for simple applications. The BCA Programme is designed with the following specific objectives.

PSO1 Foundational Knowledge: Demonstrate a solid understanding of foundational concepts in computer science.

PSO2 Programming Proficiency: Develop proficiency in programming languages and the ability to apply coding skills to solve basic computational problems.



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BACHELOR OF COMPUTER APPLICATIONS(BCA)

Course Outcomes (CO)



Course Outcomes BCA Semester-I		
Subject With Code		Course Outcomes
Fundamentals of Programming Language 'C' FCAB111101	CO1	Design and implement C programs to solve complex problems
	CO2	Describe the purpose and usage of basic c concept, control flow statements, looping and branching statements, array.
	CO3	Analyze and predict the output of more complex C programs and identify and correct logical errors in C code.
	CO4	Recognize and recall C language syntax and keywords, data types and their characteristics, variables, control flow statements, looping, array to create logical program structures and their usage.
	CO5	Assess the quality of code in terms of readability, maintainability, and adherence to coding standards
Database Management System FCAB111102	CO1	Evaluate the security and integrity of a database system
	CO2	Analyze different types of database models (relational, hierarchical, network)
	CO3	Apply normalization techniques to design and optimize database schemas
	CO4	Explain the principles of database management systems in organizing and retrieving information.
	CO5	Recognize fundamental concepts of databases, such as tables, records, fields, and keys and Memorize and list common terms used in database management
Digital Computer System Architecture FCAB111103	CO1	Recall fundamental concepts and terminology related to computer system architecture.
	CO2	Interpret the purpose and functionality of different components in a computer system.
	CO3	Apply knowledge of computer system architecture to solve problems or design simple systems.
	CO4	Combine knowledge of computer system architecture to design innovative solutions.
Communication Skills FCAB111104	CO1	Demonstrate the ability to articulate ideas clearly and confidently in spoken form.



	CO2	Develop active listening skills, enabling them to comprehend and respond appropriately to various communication cues.
	CO3	Enhance their written communication skills, producing clear, concise, and organized written documents.
	CO4	Evaluate the effectiveness of different communication methods.
	CO5	Implement learned communication techniques in real-world scenarios.
	CO6	Apply effective communication strategies in digital environments, including email, video conferencing, and social media.
	Practical - Fundamentals of Programming Language 'C' FCAB111105	CO1
CO2		Describe the purpose and usage of basic c concept, control flow statements, looping and branching statements, array.
CO3		Analyze and predict the output of more complex C programs and identify and correct logical errors in C code.
CO4		Recognize and recall C language syntax and keywords, data types and their characteristics, variables, control flow statements, looping, array to create logical program structures and their usage.
CO5		Assess the quality of code in terms of readability, maintainability, and adherence to coding standards.
Practical – DBMS & Office FCAB111106	CO1	Evaluate the security and integrity of a database system
	CO2	Analyze different types of database models (relational, hierarchical, network)
	CO3	Apply normalization techniques to design and optimize database schemas
	CO4	Explain the principles of database management systems in organizing and retrieving information.
	CO5	Recognize fundamental concepts of databases, such as tables, records, fields, and keys and Memorize and list common terms used in database management.

Course Outcomes BCA Semester- II

subject with code	Course Outcomes
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Advance Programming Language 'C' FCAB121107	CO1	Develop C programs that interact with external resources, such as file, large-scale C programs that involve multiple modules and libraries.
	CO2	Apply advanced concepts of C programming to solve complex problems.
	CO3	Analyze and debug complex C programs for logical errors and memory leaks
	CO4	Recall C programming syntax and language features like structure, UDF, File, pointer
	CO5	Design and implement C programs with a focus on optimization and efficiency
Internet & Web Design FCAB121108	CO1	Demonstrate proficiency in creating well-structured web pages using HTML for content and CSS for styling.
	CO2	Remember fundamental principles of web design, including HTML tags, CSS properties, and basic scripting concepts.
	CO3	Apply web design principles to create a basic website. Implement interactive features using JavaScript.
	CO4	Evaluate the reliability of internet sources. Assess the effectiveness of security measures in a network.
Mathematics FCAB121109	CO1	Determine whether or not a given matrix is invertible and if is, find its inverse
	CO2	Perform the matrix operations of addition multiplication and express a system of simultaneous linear equation in matrix form.
	CO3	Determine if an infinite sequence is bounded, monotonic or oscillating
	CO4	Recall basic set theory, Function, Matrices and Determinants, Sequence and Series
System Analysis FCAB121110	CO1	Design a complete system solution, including detailed system specifications, data models.
	CO2	Evaluate the feasibility of proposed systems based on technical, operational, and economic factors.
	CO3	Apply different system modeling techniques, such as data modeling and process modeling, to represent and analyze system requirements.
	CO4	Explain the principles of system analysis and design methodologies, including their purpose and relevance in software development.
	CO5	Recall basic concepts related to system analysis and design, such as the SDLC (Software Development Life Cycle), data flow diagrams, and entity-relationship diagrams

Practical - Advance Programming Language 'C FCAB121111	CO1	Develop C programs that interact with external resources, such as file ,large-scale C programs that involve multiple modules and libraries.
	CO2	Apply advanced concepts of C programming to solve complex problems.
	CO3	Analyze and debug complex C programs for logical errors and memory leaks
	CO4	Recall C programming syntax and language features like structure, UDF, File, pointer
	CO5	Design and implement C programs with a focus on optimization and efficiency
Practical – Web Design FCAB121112	CO1	demonstrate proficiency in creating well-structured web pages using HTML for content and CSS for styling.
	CO2	Remember fundamental principles of web design, including HTML tags, CSS properties, and basic scripting concepts.
	CO3	Apply web design principles to create a basic website. Implement interactive features using JavaScript.
	CO4	Evaluate the reliability of internet sources. Assess the effectiveness of security measures in a network..
Course Outcomes BCA Semester- III		
subject with code		Course Outcomes
Object Oriented Programming using C++ FCAB131101	CO1	Design and implement complex C++ programs that involve multiple classes, inheritance, and polymorphism and Create reusable libraries.
	CO2	Evaluate the appropriateness of different C++ features and techniques for specific programming tasks.
	CO3	Analyze and debug complex C++ code to identify and fix errors.
	CO4	Apply C++ programming concepts to solve problems and implement algorithms.
	CO5	Recall the basic syntax and language constructs of C++.
Advance Database Management System FCAB131102	CO1	Recall database terminology, concepts, and data modeling techniques.
	CO2	Interpret the principles of database design, query optimization, and transaction management.
	CO3	Apply database design principles to create and optimize databases. Implement complex queries and transactions.



	CO4	Analyze database structures, query performance, and troubleshoot issues.
	CO5	Assess the security, scalability, and reliability of database systems.
	CO6	Design and implement a comprehensive database system for a specific application or organization
Operating System FCAB131103	CO1	Recall key operating system concepts, including process, memory management, and file systems
	CO2	Understand the role of virtual memory and its impact on system performance.
	CO3	Implement synchronization mechanisms to address concurrent programming challenges.
	CO4	Analyze the impact of different scheduling algorithms on system performance.
Computer Network FCAB131104	CO1	Recall basic terms and concepts related to computer networks, such as protocols, OSI model layers, and network topologies.
	CO2	Interpret the principles behind networking protocols and technologies.
	CO3	Apply networking knowledge to solve problems or configure network devices.
	CO4	Assess the security, performance, and efficiency of computer networks.
	CO5	Design and implement computer networks based on specific requirements
Practical- Object Oriented Programming using C++ FCAB131105	CO1	Design and implement complex C++ programs that involve multiple classes, inheritance, and polymorphism and Create reusable C++ libraries or components.
	CO2	Evaluate the appropriateness of different C++ features and techniques for specific programming tasks.
	CO3	Analyze and debug complex C++ code to identify and fix errors.
	CO4	Apply C++ programming concepts to solve problems and implement algorithms.
	CO5	Explain the principles of object-oriented programming (OOP) and how they are implemented in C++
	CO6	Recall and reproduce the basic syntax and language constructs of C++.
	CO1	Recall database terminology, concepts, and data modeling techniques



Practical -Advance Database Management System FCAB131106	CO2	Interpret the principles of database design, query optimization, and transaction management.
	CO3	Apply database design principles to create and optimize databases. Implement complex queries and transactions.
	CO4	Analyze database structures, query performance, and troubleshoot issues.
	CO5	Assess the security, scalability, and reliability of database systems
	CO6	Design and implement a comprehensive database system for a specific application or organization
Course Outcomes BCA Semester- IV		
subject with code		Course Outcomes
Multimedia and Design FCAB141107	CO1	Design and develop multimedia projects that incorporate various elements, such as images, audio, video, and interactive components.
	CO2	Evaluate the usability and accessibility of multimedia content for diverse audiences.
	CO3	Analyze and critique multimedia projects, evaluating their effectiveness in conveying messages or stories
	CO4	Apply principles of design, layout, and color theory to create visually appealing multimedia content.
	CO5	Describe the characteristics and properties of different multimedia elements.
Data Structure FCAB141108	CO1	Design and implement complex data structures, such as trees, graphs, and hash tables
	CO2	Evaluate the impact of design decisions on the performance of a system using specific data structures.
	CO3	Analyze and evaluate the time and space complexity of algorithms related to different data structures.
	CO4	Apply knowledge of data structures to solve programming problems and implement algorithms.
	CO5	Recognize basic concepts related to data structures, such as arrays, linked lists, stacks, and queues.
Data Mining And Data Ware Housing FCAB141109	CO1	Design and implement a comprehensive data warehousing solution, including data modeling and schema design.
	CO2	Analyze and evaluate the structure and design of data warehouses



	CO3	Apply data warehousing concepts to design and implement a data warehouse.
	CO4	Explain the principles of data warehousing and its role in decision support systems.
	CO5	Define key terms related to data mining, such as clustering, classification, and association rules.
	CO6	Evaluate the appropriateness of different data mining algorithms for specific types of data
E-Commerce FCAB141110	CO1	Evaluate the legal and ethical considerations in e-commerce.
	CO2	Analyze and evaluate different e-commerce business models.
	CO3	Apply knowledge of e-commerce platforms and technologies to set up and manage an online store.
	CO4	Recognize fundamental concepts related to e-commerce.
Practical- Multimedia and Design FCAB141111	CO1	Design and develop multimedia projects that incorporate various elements, such as images, audio, video, and interactive components.
	CO2	Evaluate the usability and accessibility of multimedia content for diverse audiences.
	CO3	Analyze and critique multimedia projects, evaluating their effectiveness in conveying messages or stories
	CO4	Apply principles of design, layout, and color theory to create visually appealing multimedia content.
	CO5	Describe the characteristics and properties of different multimedia elements.
Practical-Data Structure FCAB141112	CO1	Design and implement complex data structures, such as trees, graphs, and hash tables
	CO2	Design and implement complex data structures, such as trees, graphs, and hash tables
	CO3	Analyze and evaluate the time and space complexity of algorithms related to different data structures.
	CO4	Apply knowledge of data structures to solve programming problems and implement algorithms.
	CO5	Recognize basic concepts related to data structures, such as arrays, linked lists, stacks, and queues.
Course Outcomes BCA Semester- V		
subject with code		Course Outcomes
Python Programming FCAB151101	CO-1	Recall basic Python syntax, data types, and built-in functions



	CO-2	Interpret Python code, understand control flow, and grasp the concepts of functions and modules
	CO-3	Apply Python programming concepts to solve problems and write functional code.
	CO-4	Assess the efficiency and effectiveness of Python code. Evaluate the correctness of solutions.
	CO-5	Design and develop Python program to create complex applications.
Web Development technology- PHP FCAB151102	CO-1	Recall and list the fundamental of PHP language
	CO-2	Describe principles of server-side scripting with PHP in web development
	CO-3	Evaluate the efficiency and performance of PHP code.
	CO-4	Innovate efficient solutions to solve real-world problems using PHP, HTML, CSS, and JavaScript and MySQL
Software Engineering FCAB151103	CO-1	Apply the principles of various software development methodologies, software systems design, considering architectural patterns, modularity, and scalability.
	CO-2	Learn techniques for gathering, analyzing, and documenting software requirements
	CO-3	Develop and execute test plans, ensuring the quality and reliability of software through testing methodologies.
	CO-4	Create comprehensive and well-organized documentation, including user manuals, technical specifications, and system documentation.
Management Information System FCAB151104	CO-1	Recall fundamental concepts, terms, and components of Information Systems.
	CO-2	Interpret the principles and functions of Information Systems.
	CO-3	Apply knowledge of IS to solve practical problems and analyze information needs.
	CO-4	Break down complex information systems, analyze data, and identify patterns.
	CO-5	Design and assess the effectiveness, efficiency, and security of Management Information Systems.
Practical- Python FCAB151105	CO-1	Recall basic Python syntax, data types, and built-in functions



	CO-2	Interpret Python code, understand control flow, and grasp the concepts of functions and modules
	CO-3	Apply Python programming concepts to solve problems and write functional code.
	CO-4	Assess the efficiency and effectiveness of Python code. Evaluate the correctness of solutions.
	CO-5	Design and develop Python program to create complex applications.
Practical- Web Development technology- PHP FCAB151106	CO-1	Recall and list the fundamental of PHP language
	CO-2	Describe principles of server-side scripting with PHP in web development
	CO-3	Evaluate the efficiency and performance of PHP code.
	CO-4	Innovate efficient solutions to solve real-world problems using PHP, HTML, CSS, and JavaScript and MySQL
Course Outcomes BCA Semester- VI		
Subject With Code		Course Outcomes
ADV. WEB TECH. WITH .NET C# FCAB161107	CO-1	Recall basic concepts, syntax, and features of .NET C# and related technologies.
	CO-2	Interpret the principles behind .NET C# development, understand the role of ASP.NET in web applications.
	CO-3	Apply .NET C# programming concepts to solve problems and develop functional web applications.
	CO-4	Assess the efficiency, security, and scalability of .NET C# code. Evaluate the effectiveness of web applications.
	CO-5	Design and develop original .NET C# web applications. Combine .NET C# with other web technologies for a comprehensive solution.
Artificial Intelligence FCAB161108	CO-1	To design and conduct experiments, as well as to analyze and interpret data.
	CO-2	To design a system, component and process to meet desired needs within realistic constraints such as Economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. To function on multi-disciplinary teams.
	CO-3	To understanding of professional and ethical responsibility.



	CO-4	To use the techniques, skills, and modern engineering tools necessary for engineering practice.
Practical- Adv. Web Tech. with .NET FCAB161109	CO-1	Recall basic concepts, syntax, and features of .NET C# and related technologies.
	CO-2	Interpret the principles behind .NET C# development, understand the role of ASP.NET in web applications.
	CO-3	Apply .NET C# programming concepts to solve problems and develop functional web applications.
	CO-4	Assess the efficiency, security, and scalability of .NET C# code. Evaluate the effectiveness of web applications.
	CO-5	Design and develop original .NET C# web applications. Combine .NET C# with other web technologies for a comprehensive solution
PROJECT FCAB161110	CO-1	Understand analysis of real-world problems and solutions.
	CO-2	Design and implement software based on user requirements.
	CO-3	Evaluate and test the result after the implementation with maintenance.
	CO-4	Understand the working mechanism using system diagram.
	CO-5	Describe the software documentation as per software development lifecycle.



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MASTER OF COMPUTER APPLICATIONS(MCA)

Program Outcomes (PO)



PROGRAMME OUTCOMES

On completion of MCA degree, the post graduates will be able to:

PO 1. Computational Knowledge: Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.

PO 2. Problem Analysis: Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.

PO 3. Design /Development of Solutions: Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO 4. Conduct investigations of complex computing problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5. Modern Tool Usage: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

PO 6. Professional Ethics: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.

PO 7. Life-long Learning: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

PO 8. Project management and finance: Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 9. Communication Efficacy: Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.



PO 10. Societal and Environmental Concern: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.

PO 11. Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

PO 12. Innovation and Entrepreneurship: Identify a timely opportunity and use innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.



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MASTER OF COMPUTER APPLICATIONS(MCA)

Program Specific Outcomes (PSO)



PROGRAM SPECIFIC OUTCOMES

PSO 1. Advanced Software Development Proficiency: Demonstrate proficiency in advanced programming languages, software engineering principles, and practices for building scalable and reliable software systems.

PSO 2. Research and Innovation: Engage in research activities, contribute to knowledge in the field of computer applications, and demonstrate innovative thinking.



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MASTER OF COMPUTER APPLICATIONS(MCA)

Course Outcomes (PSO)



Course Outcomes MCA Semester-I

Subject with code		Course Outcomes
Communication Skills FCAM110301	CO1	Demonstrate the ability to articulate ideas clearly and Confidently in spoken form.
	CO2	Develop active listening skills, enabling them to comprehend and respond appropriately to various communication cues.
	CO3	Enhance their written communication skills, producing clear, concise, and organized written documents.
	CO4	Evaluate the effectiveness of different communication methods.
	CO5	Implement learned communication techniques in real-world scenarios.
	CO6	Apply effective communication strategies in digital environments, including email, video conferencing, and social media.
Introduction to Programming Language FCAM110302	CO1	Design and implement c programs to solve complex problems.
	CO2	Describe the purpose and usage of basic c concept, control flow statements, looping and branching statements, array.
	CO3	Analyze and predict the output of more complex c programs and identify and correct logical errors in c code.
	CO4	Recognize and recall c language syntax and keywords, data types and their characteristics, variables, control flow statements, looping, array to create logical program structures and their usage.
	CO5	Assess the quality of code in terms of readability, maintainability, and adherence to coding standards.
Internet & Web Design FCAM110303	CO1	Demonstrate proficiency in creating well-structured web pages using html for content and css for styling.
	CO2	Remember fundamental principles of web design, including html tags, css properties, and basic scripting concepts.
	CO3	Apply web design principles to create a basic website. Implement interactive features using javascript.
	CO4	Evaluate the reliability of internet sources. Assess the effectiveness of security measures in a network.
Digital Electronics FCAM110304	CO1	Recall fundamental concepts and terminology related to computer system architecture.



	CO2	Interpret the purpose and functionality of different components in a computer system.
	CO3	Apply knowledge of computer system architecture to solve problems or design simple systems.
	CO4	Combine knowledge of computer system architecture to design innovative solutions.
Practical -Introduction to Programming Language FCAM110305	CO1	Design and implement c programs to solve complex problems
	CO2	Describe the purpose and usage of basic c concept, control flow statements, looping and branching statements, array
	CO3	Analyze and predict the output of more complex c programs and identify and correct logical errors in c code.
	CO4	Recognize and recall c language syntax and keywords, data types and their characteristics, variables, control flow statements, looping, array to create logical program structures and their usage.
	CO5	Assess the quality of code in terms of readability, maintainability, and adherence to coding standards.
Practical - Internet & Web Design FCAM110306	CO1	Demonstrate proficiency in creating well-structured web pages using html for content and css for styling.
	CO2	Remember fundamental principles of web design, including html tags, css properties, and basic scripting concepts.
	CO3	Apply web design principles to create a basic website. Implement interactive features using javascript.
	CO4	Evaluate the reliability of internet sources. Assess the effectiveness of security measures in a network..
Course Outcomes MCA Semester-II		
Subject with code		Course Outcomes
Data Communications & Networking FCAM120307	CO1	Recall basic terms and concepts related to computer networks, such as protocols, osi model layers, and network topologies.
	CO2	Interpret the principles behind networking protocols and technologies.
	CO3	Apply networking knowledge to solve problems or configure network devices.
	CO4	Assess the security, performance, and efficiency of computer networks.



	CO5	design and implement computer networks based on specific requirement
Object Technology (JAVA) FCAM120308	CO1	Demonstrate a solid understanding of fundamental object-oriented programming (oop) principles, including encapsulation, inheritance, and polymorphism.
	CO2	Learn to read from and write to files in java and understand the concept of object.
	CO3	Introduced to common design patterns and apply them to solve recurring design problems in java applications.
	CO4	Create application in java enterprise development.
Web Development & Database Management System FCAM120309	CO1	Recall database terminology, concepts, and data modeling techniques.
	CO2	Interpret the principles of database design, query optimization, and transaction management.
	CO3	Apply database design principles to create and optimize databases. Implement complex queries and transactions.
	CO4	Analyze database structures, query performance, and troubleshoot issues.
	CO5	Assess the security, scalability, and reliability of database systems.
	CO6	Design and implement a comprehensive database system for a specific application or organization.
Operating System FCAM120310	CO1	Recall key operating system concepts, including process, memory management, and file systems
	CO2	Understand the role of virtual memory and its impact on system performance.
	CO3	Implement synchronization mechanisms to address concurrent programming challenges.
	CO4	analyze the impact of different scheduling algorithms on system performance
Practical- Object Technology(JAVA) Fcap120311	CO1	Demonstrate a solid understanding of fundamental object-oriented programming (oop) principles, including encapsulation, inheritance, and polymorphism.
	CO2	Learn to read from and write to files in java and understand the concept of object.
	CO3	Introduced to common design patterns and apply them to solve recurring design problems in java applications.
	CO4	Create application in java enterprise development.
Practical-Web Development & Database Management System FCAM120312	CO1	Recall database terminology, concepts, and data modeling techniques.
	CO2	Interpret the principles of database design, query optimization, and transaction management.



	CO3	Apply database design principles to create and optimize databases. Implement complex queries and transactions.
	CO4	Analyze database structures, query performance, and troubleshoot issues.
	CO5	Assess the security, scalability, and reliability of database systems.
	CO6	Design and implement a comprehensive database system for a specific application or organization.

Course Outcomes MCA Semester-III

Subject with code		Course Outcomes
Software Engineering FCAM130301	CO1	Apply the principles of various software development methodologies, software systems design, considering architectural patterns, modularity, and scalability.
	CO2	Learn techniques for gathering, analyzing, and documenting software requirements
	CO3	Develop and execute test plans, ensuring the quality and reliability of software through testing methodologies.
	CO4	Create comprehensive and well-organized documentation, including user manuals, technical specifications, and system documentation.
Web Development Using PHP FCAM130302	CO1	Recall and list the fundamental of php language
	CO2	Describe principles of server-side scripting with php in web development
	CO3	Evaluate the efficiency and performance of php code.
	CO4	Innovate efficient solutions to solve real-world problems using php, html, css, and javascript and mysql
Mobile Applications Development FCAM130303	CO1	Recognize principles and concepts of mobile application development
	CO2	Describe the role of intents, activities, services, and broadcast receivers in android.
	CO3	Construct a well-documented and organized codebase for an android application
	CO4	Identify and troubleshoot common errors in android development
	CO5	Evaluate the effectiveness of different data storage and other apis in android.
Computer Security FCAM130304	CO1	Analyze and evaluate the computer security needs of an organization.



	CO2	Conduct a computer security risk assessment.
	CO3	Measure the performance and troubleshoot computer security systems.
	CO4	Implement computer security solutions.
Practical -Web Development Using PHP FCAM130305	CO1	Recall and list the fundamental of php language
	CO2	Describe principles of server-side scripting with php in web development
	CO3	Evaluate the efficiency and performance of php code.
	CO4	Innovate efficient solutions to solve real-world problems using php, html, css, and javascript and mysql
Practical -Mobile Applications Development FCAM130306	CO1	Recognize principles and concepts of mobile application development
	CO2	Describe the role of intents, activities, services, and broadcast receivers in android.
	CO3	Construct a well-documented and organized codebase for an android application
	CO4	Identify and troubleshoot common errors in android development
	CO5	Evaluate the effectiveness of different data storage and other apis in android.
Mobile Testing & Automation FCAM130307	CO1	Recall mobile testing terminology, testing types, and basic principles of understand the challenges in mobile app testing,
	CO2	Apply mobile testing techniques, tools, and frameworks to perform testing activities.
	CO3	Break down mobile app testing scenarios, analyze test results, and identify issues and defects.
	CO4	Design a mobile test plan that includes both manual and automated testing.
Data Mining And Data Ware Housing FCAM130308	CO1	Design and implement a comprehensive data warehousing solution, including data modeling and schema design.
	CO2	Analyze and evaluate the structure and design of data warehouses
	CO3	Apply data warehousing concepts to design and implement a data warehouse.
	CO4	Explain the principles of data warehousing and its role in decision support systems.
	CO5	Define key terms related to data mining, such as clustering, classification, and association rules.
	CO6	Evaluate the appropriateness of different data mining algorithms for specific types of data



Course Outcomes MCA Semester-IV		
Subject with code		Course Outcomes
PROJECT FCAM140301	CO1	Understand analysis of real-world problems and solutions.
	CO2	Design and implement software based on user requirements.
	CO3	Evaluate and test the result after the implementation with maintenance.
	CO4	Understand the working mechanism using system diagram.
	CO5	Describe the software documentation as per software development lifecycle



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Bachelor of Commerce (B.COM)
Batch (2018-2023)
Program Outcome



PO1 - Enables learners to get theoretical and practical exposure in the commerce sector which includes Accounts, Commerce, Marketing, Management, Economics, and Environment etc.

PO2 - Develops communication skills and build confidence to face the challenges of the corporate world.

PO3 - Enhances the capability of decision making at personal and professional levels.

PO4 - Makes students industry ready and develop various managerial and accounting skills for better professional opportunities.

PO5 - Develops entrepreneurial skills amongst learners.

PO6 - Strengthens their capacities in varied areas of commerce and industry aiming towards holistic development of learners.

PO7 - Thus, after completing their graduation learners develop a thorough understanding of the fundamentals in Commerce and Finance.



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Bachelor of Commerce (B.COM)

Batch (2018-2023)

Program Specific Outcome (PSO)



Program Specific Outcome

PSO1: To cater to the human resource needs of companies in accounting and auditing, tax laws, financial analysis and costing.

PSO2: to inspire entrepreneurship and managerial skills in learners so as to enable them to establish and manage businesses effectively.

PSO3: To impart the learners with exhaustive and in depth knowledge of financial system and investment decisions.

PSO4: To enrich the learners with good communication, numerical ability, team work, leadership skills and ethical values.

PSO5: to enable students with ICT skills through MS Excel and enrich their knowledge for career enhancement.



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Bachelor of Commerce (B.COM)

Batch (2018-2023)

Course Outcome (CO)



Students of all undergraduate Bachelor of Commerce degree program at the time of graduate will be able to learn.

Course Outcomes Semester -1 B.COM		
Subject with code		Course Outcome
Micro economics (FCB210101)	CO1	To provide students' knowledge of Micro Economic concepts and inculcate an analytical approach to the subject matter.
	CO2	To arouse the student's interest by showing the relevance and use of various economic theories.
	CO3	To apply economic reasoning to solve business problems.
	CO4	To understand how the concepts of microeconomics help them take economic decisions in real life.
Principle of Management-I (FCB210102)	CO1	Identify and communicate the purpose and functions of management.
	CO2	Practice the process of management's four functions: Planning, organizing, leading and controlling
	CO3	Help students to determine most effective action to be taken in specific situations practicing various management principles.
	CO4	Demonstrate a clear understanding of key management concepts, including planning, organizing, leading, and controlling.
	CO1	To define bookkeeping and accounting.



Accountancy –I (FCB210103)	CO2	To explain the general purpose and functions of accounting.
	CO3	To explain the differences between management and financial accounting.
	CO4	Understand the principles of double-entry accounting, including debits and credits, and how transactions are recorded in the accounting equation.
Business communication-I (FCB210104)	CO1	Understand the various forms of the business organizations along with their important features and legal rules.
	CO2	Students will know the working of the industries, ethical values and corporate social responsibilities.
	CO3	Comprehend different types of communication and how business letters and reports helpful for the systematic operation of the organization.
	CO4	Enhance active listening skills to understand and respond appropriately to verbal communication in a business setting.
Financial Accounting-I (FCB210105)	CO1	Students will have complete knowledge of Indian as well as International Accounting Standards
	CO2	With advanced knowledge of accounting, business world will be ready to absorb students
	CO3	Understand the accounting treatment for various types of assets, liabilities, and equity, including recognition, measurement, and disclosure.
	CO4	Apply revenue recognition principles to different types of transactions and industries, understanding the timing and criteria for recognizing revenue.



Computer Application – I (FCB210106)	CO1	Students will proficiently use common office software for creating and editing documents, spreadsheets, and presentations.
	CO2	Participants will demonstrate the ability to design and develop simple computer programs using fundamental programming concepts.
	CO3	Learners will gain practical knowledge in troubleshooting and maintaining computer systems, enhancing their skills in basic IT support.
	CO4	Develop skills in creating and formatting documents using word processing software, including features such as formatting, styles, and templates.



Course Outcomes Semester -II B.COM		
Subject with code		Course Outcome
Macro Economics (FCB220101)	CO1	To understand economy of a country and macroeconomic events such as unemployment, inflation and the balance of payments
	CO2	Critically assess real-world macroeconomic developments through national income indicators.
	CO3	To relate to the real world and get a deeper insight regarding Disinvestments, FDI's and FII's.
	CO4	Analyze the causes and consequences of unemployment and inflation, and understand their impact on the overall economy.
Business Environment (FCB220102)	CO1	Identify different types of Business Environment
	CO2	Recognize tools for examining the Environment
	CO3	Explain the role of economic systems, economic planning, government policies, public sector and development banks, economic reforms, liberalization, patent laws and its impact on business.
	CO4	Analyze the role of technology in the business environment, including innovation, digitalization, and the impact of emerging technologies.
Accountancy-II (FCB220103)	CO1	Students will recognize and understand ethical issues related to the accounting profession.
	CO2	Employee critical thinking skills to analyze financial data as well as the effect of differing financial accounting methods on the financial statements.



	CO3	Applying appropriate judgment derived from knowledge of accounting theory to financial analysis and decision making.
	CO4	Recognize and address ethical considerations in accounting practices, including issues related to integrity, objectivity, and professional conduct.
Business Communication-II (FCB220104)	CO1	Write business communication documents.
	CO2	Demonstrate effective presentations skills
	CO3	Show improved interview skills and confidence in group discussions.
	CO4	Improve interpersonal communication skills for building positive relationships with colleagues, clients, and other business associates.
Financial Accounting-II (FCB220105)	CO1	Students will have complete knowledge of Indian as well as International Accounting Standards.
	CO2	With advanced knowledge of accounting, business world will be ready to absorb students.
	CO3	Understand the principles of auditing and the role of auditors in ensuring the accuracy and reliability of financial information.
	CO4	Understand the principles of financial management, including capital budgeting, financial planning, and risk management.
Computer Application –II (FCB220106)	CO1	Use the features available in Windows
	CO2	Work with System Tools and use Accessibility Features of Windows
	CO3	Create documents using MS Word



	CO4	Gain proficiency in using internet browsers, search engines, and online resources for research and information retrieval.
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Course Outcomes Semester -III B.COM		
Subject with code		Course Outcome
Managerial Economics (FCB230101)	CO1	To understand the basic elements of managerial economics aspects, nature and decision making.
	CO2	To understand the law of demand, supply forecasting, consumer durable.
	CO3	To understand theories of profit, profit maximization and analysis of Break Even Point.
	CO4	Analyze production processes and cost structures to optimize resource allocation and production efficiency.
Human Resource & Management (FCB230102)	CO1	Creates understanding of the importance of HRM in today's scenario.
	CO2	Creates understanding of the various functions of HRM.
	CO3	Enables creating strategies to improve HR quality.
	CO4	Develop skills in attracting, recruiting, and selecting qualified candidates to meet organizational staffing requirements.
Taxation-I (FCB230103)	CO1	Creates an understanding of the basic concept of Direct Tax and basic definition related to Direct Tax and assessed.
	CO2	Provides learners an idea of the process and techniques of calculation of taxability and tax liability.



	CO3	Understand the tax implications of estate planning, gifts, and inheritance, including applicable exemptions and exclusions.
	CO4	Understand the broader economic and social implications of tax policies and the role of tax administration in enforcing tax laws
Cost Accounting-I (FCB230104)	CO1	Aimed to familiarize the concept of cost accounting.
	CO2	Helps to gather knowledge on preparation of cost Sheet in its practical point of view.
	CO3	To facilitate the idea and meaning of material control with pricing methods.
	CO4	Analyze how costs behave in relation to changes in activity levels, distinguishing between fixed and variable costs.
Commercial Communication (FCB230105)	CO1	Upon completion of the course, students are able to Demonstrate a good understanding of effective business writing and effective business communications.
	CO2	Students can able developing and delivering effective presentations.
	CO3	To understand effective interpersonal communications skills that maximize team effectiveness.
	CO4	Understand the importance of communication planning in aligning messages with organizational goals and strategies.
Corporate Accounting (FCB230106)	CO1	To give an exposure to the company final accounts.
	CO2	To provide knowledge on Goodwill.
	CO3	Students can get an idea about internal reconstruction.
	CO4	Analyze the accounting treatment of treasury stock, including its repurchase and retirement.



Course Outcomes Semester -1V B.COM		
Subject with code		Course Outcome
Indian Economics (FCB240101)	CO1	To enable students to understand students to a new approach to the study of the Indian Economy.
	CO2	To help the students in analyzing the present status of the Indian Economy.
	CO3	To rendering the process of integration of the Indian Economy with other economics of the world.
	CO4	Understand the role of monetary policy and fiscal policy in managing inflation, unemployment, and promoting economic stability.
Auditing-I (FCB240102)	CO1	Acquire the basic knowledge of auditing, objectives of auditing, audit program, audit note book, working paper, voucher, vouching, verification, valuation, reserves & provisions, audit report & investigation.
	CO2	Develop the analytical skills in conducting share capital and share transfer audit, Vouching Vs Verification Vs Valuation, provisions of companies act regarding investigation, contents and types of audit report, discussions of various case laws.
	CO3	Evaluate the methods of depreciation, Rights, duties & liabilities of an auditor, various types of auditing.
	CO4	Evaluate and assess the effectiveness of internal controls within an organization to ensure the reliability of financial reporting.
Taxation – II (FCB240103)	CO1	Creates an understanding of the basic concept of Direct Tax and basic definition related to Direct Tax and assessed.
	CO2	Provides learners an idea of the process and techniques of calculation of taxability and tax liability



	CO3	Explore tax credits, deductions, and incentives available to individuals and businesses to encourage specific behaviors or investments.
	CO4	Recognize and address ethical considerations in tax planning and compliance, including issues related to transparency, fairness, and professional responsibility.
Cost Accounting –II (FCB240104)	CO1	Aimed to familiarize the concept of cost accounting.
	CO2	Helps to gather knowledge on preparation of cost sheet in its practical point of view.
	CO3	To facilitate the idea and meaning of material control with pricing methods.
	CO4	Understand the principles of activity-based costing and use it to allocate costs based on activities and their consumption.
Organizational Communication (FCB240105)	CO1	Upon completion of the course, students are able to demonstrate a good understanding of effective business writing and effective business communications.
	CO2	Students can able developing and delivering effective presentations.
	CO3	To understand effective interpersonal communications skills that maximize team effectiveness
	CO4	Develop skills in communication training, including designing and delivering effective communication workshops for employees
Production Management (FCB140106)	CO1	Recognizes the concept of production management.
	CO2	Recognizes the effects of globalization to the production management.
	CO3	Assesses the primary problems of production management.



	CO4	Analyze different production systems, such as job shop, batch production, mass production, and continuous production, and understand their applications.
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Course Outcomes Semester -V B.COM		
Subject with code		Course Outcome
Statistics (FCB250101)	CO1	Comfort with analyzing the basic statistical tools Ability to link this idea with managerial decision-making process.
	CO2	Ability to interpret the correlation and regression technique between two or more than two variables Understand the concept of probability
	CO3	Application of permutation and combination in probability Sound grasp of the concept of index numbers Recognize the concept of sampling, estimation and sampling distributions Understand the concept of time series analysis
	CO4	Understand and apply descriptive statistics to summarize and describe the main features of a dataset, including measures of central tendency and dispersion.
Business Law-I (FCB250102)	CO1	Comfort with analyzing the basic statistical tools Ability to link this idea with managerial decision-making process.
	CO2	Identify the law relating to sell of goods acts 1930.
	CO3	Determining law relating to negotiable instrument act 1881.
	CO4	Understand the fundamental concepts and principles of business law.



Costs and Financial Accounting (FCB250103)	CO1	To keep the students conversant with the ever – enlarging frontiers of Cost Accounting knowledge.
	CO2	Students can get knowledge of different methods and techniques of cost accounting.
	CO3	To impart Knowledge about the concepts and principles application of Overheads.
	CO4	Prepare and analyze financial statements, including the income statement, balance sheet, and statement of cash flows.
Management Accounting-I (FCB250104)	CO1	To enlighten the students thought and knowledge on management Accounting.
	CO2	Helps to give proper idea on financial statement analysis in practical point of view.
	CO3	Assesses the primary problems of production management.
	CO4	Develop and analyze budgets to facilitate planning and control.
Portfolio Management (FCB250105)	CO1	Enables a financial expert determine the value of assets in a portfolio.
	CO2	Creates understanding of evaluation of securities with the help of certain fundamental business factors
	CO3	Analyze and evaluate different asset classes and their risk-return profiles.
	CO4	Develop skills in determining the optimal mix of asset classes based on investment goals and risk tolerance
Money, Financial Systems & Indian Economy - I (FCB250106)	CO1	Complete knowledge of Financial System of India.
	CO2	Clarity about the basic concepts of money, money supply and money creation.
	CO3	Understanding of technical terms relating to Financial System like Derivatives, Stock etc.



	CO4	Understand the functions and responsibilities of the Reserve Bank of India (RBI) as the central bank.
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Course Outcomes Semester -VI B.COM		
Subject with code		Course Outcome
Personnel Management (FCB260101)	CO1	Develop understanding the human dimensions of Behaviour and personal management.
	CO2	Enable understanding of the group dynamics in work organizations.
	CO3	Develop effective communication skills for both written and verbal communication.
	CO4	Understand the basics of personal finance, budgeting, and financial planning.
Business Law- II (FCB260102)	CO1	Provides a brief idea about the frame work of Indian business law.
	CO2	Familiarizes the students with case law studies related to business law.
	CO3	Understand the legal relationship between principals and agents, including the authority and responsibilities of each party.
	CO4	Study laws and regulations related to the issuance and trading of securities, including the role of regulatory bodies.
Management Accounting II (FCB260103)	CO1	To enlighten the students thought and knowledge on management Accounting.
	CO2	Helps to give proper idea on financial statement analysis in practical point of view.
	CO3	Assesses the primary problems of production management.



	CO4	Develop and analyze budgets to facilitate planning and control.
International Marketing (FCB260104)	CO1	Analyze the environmental variables that influence international marketing
	CO2	Describe the strategies and tactics that can lead to successful international marketing given those environmental constraints
	CO3	Discuss the more typical management decisions and problems faced, highlighting those peculiar to the international arena
	CO4	Analyze political, economic, social, technological, and legal factors affecting international marketing.
Money, Financial Systems and Indian Economy-II (FCB260105)	CO1	Apply the knowledge of money and banking in their life.
	CO2	Apply the knowledge of money and capital market for their financial stability.
	CO3	Versed the concepts and types of finance.
	CO4	Understand the components of government revenue and expenditure
Management of Organised Market (FCB260106)	CO1	Understand the environment of investment and risk return framework.
	CO2	Analyze bonds in terms of valuation, yields and risks as well as build up immunized bond portfolio
	CO3	Analyze equity shares using different approaches and models.
	CO4	Analyze the rules and regulations governing the market's operations.



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(Gujarat Private State University Act 4 of 2018)

Bachelor of Business Administration (B.B.A)
Batch (2018-2023)
Program Outcome



PO1 - Upon completion of the BBA program, the individual must demonstrate maturity, professionalism and team working skills.

PO2 - Upon completion of the BBA program the students will have general idea of operations in business.

PO3 - Upon completion of the BBA program, the individual will have specialized skills to deal with area specific issues of concern.

PO4 – Upon completion of the BBA program, the individual will be able to apply technological knowhow for business advancements.

PO5 - Upon completion of the BBA program, the individual will be capable of analyzing, investigating and solving critical business issues.

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Bachelor of Business Administration (B.B.A)
Batch (2018-2023)
Program Specific Outcome (PSO)



Program Specific Outcome

PSO1: Understand of the corporate world.

PSO2: Analyze the theoretical knowledge with the practical aspects of Organizational setting and techniques or management.

PSO3: Determine conceptual and analytical abilities required for effective decision making.

PSO4: Understand the dynamic and complex working environment of Business.

PSO5: Understand the problems faced by the business sector in the Current scenario.



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Bachelor of Business Administration (B.B.A)
Batch (2018-2023)
Course Outcome (CO)



Students of all undergraduate Bachelor of Business Administration degree program at the time of graduate will be able to learn.

Course Outcomes Semester -1 B.B.A		
Subject with code		Course Outcome
Micro Economics (FMB210101)	CO1	To provide students' knowledge of Micro Economic concepts and inculcate an analytical approach to the subject matter.
	CO2	To arouse the student's interest by showing the relevance and use of various economic theories.
	CO3	To apply economic reasoning to solve business problems.
	CO4	To understand how the concepts of microeconomics help them take economic decisions in real life.
Principle of Management-I (FMB210102)	CO1	Identify and communicate the purpose and functions of management.
	CO2	Practice the process of management's four functions: Planning, organizing, leading and controlling
	CO3	Help students to determine most effective action to be taken in specific situations practicing various management principles.
	CO4	Demonstrate a clear understanding of key management concepts, including planning, organizing, leading, and controlling.
Forms of Business Organization (FMB210103)	CO1	Identify Different Forms of Business Organization.
	CO2	Distinguish Between Various Forms of Organizations.
	CO3	Discuss the factors determining choice of an appropriate form of Business organization.



	CO4	Evaluate the various elements affecting the business environment.
Business Communication-I (FMB210104)	CO1	Understand the various forms of the business organizations along with their important features and legal rules.
	CO2	Students will know the working of the industries, ethical values and corporate social responsibilities.
	CO3	Comprehend different types of communication and how business letters and reports helpful for the systematic operation of the organization.
	CO4	Enhance active listening skills to understand and respond appropriately to verbal communication in a business setting.
Financial Accounting-I (FMB210105)	CO1	Students will have complete knowledge of Indian as well as International Accounting Standards
	CO2	With advanced knowledge of accounting, business world will be ready to absorb students
	CO3	Understand the accounting treatment for various types of assets, liabilities, and equity, including recognition, measurement, and disclosure.
	CO4	Apply revenue recognition principles to different types of transactions and industries, understanding the timing and criteria for recognizing revenue.
Computer Application – I (FMB210106)	CO1	Students will proficiently use common office software for creating and editing documents, spreadsheets, and presentations.
	CO2	Participants will demonstrate the ability to design and develop simple computer programs using fundamental programming concepts.



	CO3	Learners will gain practical knowledge in troubleshooting and maintaining computer systems, enhancing their skills in basic IT support.
	CO4	Develop skills in creating and formatting documents using word processing software, including features such as formatting, styles, and templates.



Course Outcomes Semester -II B.B. A		
Subject with code		Course Outcome
Macro Economics (FMB220101)	CO1	To understand economy of a country and macroeconomic events such as unemployment, inflation and the balance of payments
	CO2	Critically assess real-world macroeconomic developments through national income indicators.
	CO3	To relate to the real world and get a deeper insight regarding Disinvestments, FDI's and FII's.
	CO4	Analyze the causes and consequences of unemployment and inflation, and understand their impact on the overall economy.
Business Environment (FMB220102)	CO1	Identify different types of Business Environment
	CO2	Recognize tools for examining the Environment
	CO3	Explain the role of economic systems, economic planning, government policies, public sector and development banks, economic reforms, liberalization, patent laws and its impact on business.
	CO4	Analyze the role of technology in the business environment, including innovation, digitalization, and the impact of emerging technologies.
Growth & Structure of Industries (FMB220103)	CO1	Explain the Growth and Structural Composition Of Indian Industry As It Evolved Over Time.
	CO2	Critically Describe the Phase-Wise Developmental Performance Of The Indian Industry.
	CO3	Indicate the direction of industrial development envisaged in the initial years of planning with a



		thrust on import substitution leading to a phase of controlled regime.
	CO4	To explain the growth and structural composition of Indian industry as it evolved over time
Business Communication-II (FMB220104)	CO1	Write business communication documents.
	CO2	Demonstrate effective presentations skills
	CO3	Show improved interview skills and confidence in group discussions.
	CO4	Improve interpersonal communication skills for building positive relationships with colleagues, clients, and other business associates.
Financial Accounting-II (FMB220105)	CO1	Students will have complete knowledge of Indian as well as International Accounting Standards.
	CO2	With advanced knowledge of accounting, business world will be ready to absorb students.
	CO3	Understand the principles of auditing and the role of auditors in ensuring the accuracy and reliability of financial information.
	CO4	Understand the principles of financial management, including capital budgeting, financial planning, and risk management.
Computer Application –II (FMB220106)	CO1	Use the features available in Windows
	CO2	Work with System Tools and use Accessibility Features of Windows
	CO3	Create documents using MS Word
	CO4	Gain proficiency in using internet browsers, search engines, and online resources for research and information retrieval.



Course Outcomes Semester -III B.B. A		
Subject with code		Course Outcome
Marketing Management (FMB230101)	CO1	To Outline Key Marketing Concepts and Its Application to Different Markets.
	CO2	To Identify Factors and Processes Essential for Designing Marketing Strategy.
	CO3	To Analyze and Examine the Implementation of Marketing Concepts and Strategy to Firms.
	CO4	Formulate a marketing* plan that will meet the needs or goals of a business or organization
Human Resource & Management (FMB230102)	CO1	Creates understanding of the importance of HRM in today's scenario.
	CO2	Creates understanding of the various functions of HRM.
	CO3	Enables creating strategies to improve HR quality.
	CO4	Develop skills in attracting, recruiting, and selecting qualified candidates to meet organizational staffing requirements.
Taxation-I (FMB230103)	CO1	Creates an understanding of the basic concept of Direct Tax and basic definition related to Direct Tax and assessed.
	CO2	Provides learners an idea of the process and techniques of calculation of taxability and tax liability.
	CO3	Understand the tax implications of estate planning, gifts, and inheritance, including applicable exemptions and exclusions.
	CO4	Understand the broader economic and social implications of tax policies and the role of tax administration in enforcing tax laws



Cost Accounting-I (FMB230104)	CO1	Aimed to familiarize the concept of cost accounting.
	CO2	Helps to gather knowledge on preparation of cost Sheet in its practical point of view.
	CO3	To facilitate the idea and meaning of material control with pricing methods.
	CO4	Analyze how costs behave in relation to changes in activity levels, distinguishing between fixed and variable costs.
Introduction to Entrepreneurship (FMB230105)	CO1	Understand the meaning of entrepreneurship and its different classifications.
	CO2	Understand the importance of opportunity recognition and internal and external analyses to the success of a business venture.
	CO3	Understand the components and importance of the business plan to entrepreneurial venture development and sustainability.
	CO4	Understand the importance of the marketing plan to obtaining, maintaining and expanding an entrepreneur's reach to its target market.
Corporate Accounting (FMB230106)	CO1	To give an exposure to the company final accounts.
	CO2	To provide knowledge on Goodwill.
	CO3	Students can get an idea about internal reconstruction.
	CO4	Analyze the accounting treatment of treasury stock, including its repurchase and retirement.



Course Outcomes Semester -IV B.B. A		
Subject with code		Course Outcome
Legal Aspects of Indian Business (FMB240101)	CO1	Know rights and duties under various legal Acts.
	CO2	Understand consequences of applicability of various laws on business situations.
	CO3	Develop Critical Thinking Through the Use of Law Cases.
	CO4	Governs the incorporation, regulation, and dissolution of companies. It outlines the rights and duties of directors, shareholders, and auditors
Export Management (FMB240102)	CO1	Identify major product decisions that are necessary for export markets in order to facilitate product adaptation to the markets in question.
	CO2	Apply various exports procedures and formalities to run an export business.
	CO3	Locate various sources of information, institutional infrastructure and incentives for exporters.
	CO4	Modify products or services to meet the specific requirements of target markets.
Taxation – II (FMB240103)	CO1	Creates an understanding of the basic concept of Direct Tax and basic definition related to Direct Tax and assessed.
	CO2	Provides learners an idea of the process and techniques of calculation of taxability and tax liability
	CO3	Explore tax credits, deductions, and incentives available to individuals and businesses to encourage specific behaviors or investments.



	CO4	Recognize and address ethical considerations in tax planning and compliance, including issues related to transparency, fairness, and professional responsibility.
Cost Accounting –II (FMB240104)	CO1	Aimed to familiarize the concept of cost accounting.
	CO2	Helps to gather knowledge on preparation of cost sheet in its practical point of view.
	CO3	To facilitate the idea and meaning of material control with pricing methods.
	CO4	Understand the principles of activity-based costing and use it to allocate costs based on activities and their consumption.
Business Research & Methodology (FMB240105)	CO1	Understand advanced design, methodologies and analysis in business research methods, including key terms, classifications and systematic applications to the research data.
	CO2	Generate ideas and identify core business problem and distil into a research problem based on the scope and objectives of the study.
	CO3	Evident, analyze, and support the association of variables attributed in the conceptual model with theory and outcomes of the relevant published articles.
	CO4	Conduct a comprehensive review of existing literature related to the research topic.
Production Management (FMB140106)	CO1	Recognizes the concept of production management.
	CO2	Recognizes the effects of globalization to the production management.
	CO3	Assesses the primary problems of production management.



	CO4	Analyze different production systems, such as job shop, batch production, mass production, and continuous production, and understand their applications.
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Course Outcomes Semester -V B.B. A		
Subject with code		Course Outcome
Business Strategy and Entrepreneur (FMB250101)	CO1	Key concepts underpinning entrepreneurship and its application in the recognition and exploitation of product/ service/ process opportunities.
	CO2	Key concepts underpinning innovation and the issues associated with developing and sustaining innovation within organizations.
	CO3	Clearly define the vision and mission of the business. The vision outlines the long-term aspirations, while the mission articulates the purpose and values guiding the company.
	CO4	Conduct a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to assess internal and external factors influencing the business
Industrial Relation & Labour Law (FMB250102)	CO1	Students should able to elaborate the concept of Industrial Relations.
	CO2	The students should able to illustrate the role of trade union in the industrial setup.
	CO3	Students should able to elaborate Industrial Dispute settlement procedures.



	CO4	Familiarize with and adhere to relevant labor laws and regulations applicable in the specific jurisdiction.
Organizational Behaviour (FMB250103)	CO1	Students will be able to explain the concept of Organization Design and determine the factors that affect Organization Design.
	CO2	Students will be able to identify the components of Individual Behaviour and apply the concept of Learning, Perception, Attitudes and values.
	CO3	The students will be able to justify how organizational change and conflict affect working relationships within organizations.
	CO4	Examination of how individuals interpret and make sense of their environment.
Management Accounting-I (FMB250104)	CO1	To enlighten the students thought and knowledge on management Accounting.
	CO2	Helps to give proper idea on financial statement analysis in practical point of view.
	CO3	Assesses the primary problems of production management.
	CO4	Develop and analyze budgets to facilitate planning and control.
Portfolio Management (FMB250105)	CO1	Enables a financial expert determine the value of assets in a portfolio.
	CO2	Creates understanding of evaluation of securities with the help of certain fundamental business factors
	CO3	Analyze and evaluate different asset classes and their risk-return profiles.
	CO4	Develop skills in determining the optimal mix of asset classes based on investment goals and risk tolerance



Banking & Insurance (FMB250106)	CO1	Make the students to aware of the fundamentals of banking and knowledge of banking operations.
	CO2	Analysis the Role and organization structure of Indian banking system.
	CO3	Explain risk management in insurance and understanding of the insurance mechanism.
	CO4	Create the ability to use the fundamental accounting equation to analyze the effect of business transactions on an organization's accounting records and financial statements

Course Outcomes Semester -VI B.B.A		
Subject with code		Course Outcome
Personnel Management (FMB260101)	CO1	Develop understanding the human dimensions of Behaviour and personal management.
	CO2	Enable understanding of the group dynamics in work organizations.
	CO3	Develop effective communication skills for both written and verbal communication.
	CO4	Understand the basics of personal finance, budgeting, and financial planning.
Auditing (FMB260102)	CO1	Acquire the basic knowledge of auditing, objectives of auditing, audit program, audit note book, working paper, voucher, vouching, verification, valuation.,
	CO2	Develop the analytical skills in conducting share capital and share transfer audit, Vouching Vs Verification Vs Valuation.



	CO3	Evaluate the methods of depreciation, Rights, duties & liabilities of an auditor, various types of auditing.
	CO4	Apply critical thinking skills and solve auditing problems through the use of case studies.
Stock Exchange Communication and Insurance (FMB260103)	CO1	To Understand the Stock and Commodity Markets Positions.
	CO2	Know the process of opening Demat A/C.
	CO3	Categorize different commodities and match the commodities with the commodity exchange.
	CO4	Classify different kinds of derivatives and trade.
International Marketing (FMB260104)	CO1	Analyze the environmental variables that influence international marketing
	CO2	Describe the strategies and tactics that can lead to successful international marketing given those environmental constraints
	CO3	Discuss the more typical management decisions and problems faced, highlighting those peculiar to the international arena
	CO4	Analyze political, economic, social, technological, and legal factors affecting international marketing.
Project Work (FMB260105)	CO1	students will acquire practical skills in planning, executing.
	CO2	Participants will develop a comprehensive understanding of project methodologies.
	CO3	Develop a comprehensive business plan for a new business idea.
	CO4	Develop HR policies and procedures for a fictional or existing company.



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Master of Business Administration (M.B.A)
Batch (2021-2023)
Program Outcome



Program Outcome

PO1 - Apply knowledge of management theories and practices to solve business problems.

PO2 - Foster analytical and critical thinking abilities for data-based decision making.

PO3 - Ability to develop value-based leadership ability.

PO4 -Ability to understand, analyses and communicate global, economic, legal, and ethical areas of business.

PO5 - Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment.



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Master of Business Administration (M.B.A)

Batch (2021-2023)

Program Specific Outcome (PSO)



Program Specific Outcome

PSO1: Disciplinary Knowledge & Problem Solving

PSO2: Foster analytical and critical thinking abilities.

PSO3: Leadership Quality.

PSO4: Communication Skills & Ethical/ Social Awareness.

PSO5: Cooperation and Team Work for building Team Environment.

PSO6: The student will be able to work independently, identify appropriate resources required for a project and manage a project through to completion.

PSO7: The student will be able to develop self-sustainability as well as competitiveness and employability in context of technological changes.



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Approved By Govt. of Gujarat
(Recognized by UGC under Section 22 & 21) of 1956)
(Gujarat Private State University Act 4 of 2018)

Master of Business Administration (M.B.A)

Batch (2021-2023)

Course Outcome (CO)



Students of all undergraduate Bachelor of Business Administration degree program at the time of graduate will be able to learn.

Course Outcomes Semester -1 M.B.A		
Subject with code		Course Outcome
Accounting for Managers (FMM110401)	CO1	Demonstrate the applicability of the concept of Accounting to understand the managerial Decisions and financial statements.
	CO2	Apply the Financial Statement Analysis associate with Financial Data in the organization.
	CO3	Demonstrate how the concepts of accounting and costing could integrate while identification and resolution of problems pertaining to LM Sector.
	CO4	To understand the basic concepts of financial accounting, cost accounting and management accounting.
Economics for Managers (FMM110402)	CO1	Develop an understanding of the applications of managerial economics.
	CO2	Students will be prepared to apply both micro and macro-economic concepts in business environment.
	CO3	Students will develop analytical and problem-solving skills by learning the subject through case-based approach.
	CO4	Apply economic principles to management decisions. Understand the Nature, Scope and Significance of Managerial Economics, its Relationship with other Disciplines. Understand the Role of Managerial Economics in Decision Making.



		Understand the cardinal and ordinal approach of consumer behavior
Managerial Communication (FMM110403)	CO1	Effective interpersonal communications.
	CO2	Developing and delivering effective presentations.
	CO3	Develop word processing skills to format effective, attractive, 'reader-friendly' documents appropriate for business.
	CO4	Demonstrate competence in verbal business communication. Demonstrate competence in the fundamentals of business writing
Management Process and Organisational Behaviour (FMM110404)	CO1	To make use of different management and organizational behaviour principles in the course of decision making in different forms of business organizations.
	CO2	Understand own management style as it relates to influencing and managing behaviour in the organization systems.
	CO3	Analyse the behavior of individuals and groups in organisations in terms of the key factors that influence organisational behaviour.
	CO4	Explain the influence of individual behavior, group behavior and structure in improving organizational effectiveness. Apply the individual behavior concepts for making people related decisions at workplace. Choose methods to enhance employee productivity in different workplace situations.
Quantitative Techniques for Management (FMM110405)	CO1	The students will be able to comprehend and interpret graphs and summary statistics presented in academic papers, reports and studies.
	CO2	Demonstrate a professional understanding of the basic mathematical and statistical techniques needed for quantitative analysis.



	CO3	Demonstrate an appreciation of the vast array of quantitative techniques that still remain unexplored.
	CO4	Apply different statistical tools and techniques in managerial and socialIdentify the proper statistical tools for analyzing the data. problem solving
Fundamentals of Marketing (FMM110406)	CO1	Identify core concepts of marketing and the role of marketing in business and society.
	CO2	Formulate marketing strategies that incorporate psychological and sociological factors which influence consumers.
	CO3	Analyse marketing problems and provide solutions based on a critical examination of marketing information.
	CO4	Identify core concepts of marketing and the role of marketing in business and society. Expose to the global nature of marketing and explore appropriate measures to operate effectively in international settings. Able to develop marketing strategies based on product, price, place and promotion objectives.



Course Outcomes Semester -II M.B. A		
Subject with code		Course Outcome
Cost & Management Accounting (FMM120401)	CO1	The course aims to familiarize the students with Cost and management accounting.
	CO2	Students would be able to go through the basic concepts related to Accounting, Financial Statements, Cost Accounting.
	CO3	Students can perform all the necessary calculations through the relevant numerical problems.
	CO4	Students would be able to analyses the situation and decide the key financial as well as non-financial elements involved in the situation.
Financial Management (FMM120402)	CO1	The course aims to familiarize the students with financial management.
	CO2	Students would be well aware of the basic concepts related to Financial Management, Various techniques of Financial Statement Analysis.
	CO3	Perform all the required calculations through relevant numerical problems.
	CO4	Students would be able to analyses the situation and comment on financial position of the firm.
Advance Marketing Management (FMM120403)	CO1	Application of marketing principles and theories to the demands of marketing function and practice in contemporary real-world scenarios.
	CO2	Demonstrate the relevance of marketing management concepts and frameworks to a new or existing business across wide variety of sectors.
	CO3	Apply marketing principles and theories to the demands of marketing function and practice in contemporary real-world scenarios.



	CO4	Relate Marketing Mix as a framework for Marketing Decision making. Understand the need, importance and process of Marketing Planning and Control. Learn and examine the students to the dynamic nature of Marketing Function
Human Resources Management (FMM120404)	CO1	Understanding the elements relate to various aspects of HRM, such as Training, Promotion, placement, Remuneration, welfare measures etc.
	CO2	Implementing better techniques for effective Human resource management.
	CO3	Illustrate the different methods of HR Acquisition and retention.
	CO4	Demonstrate the role of HRM in an organization Utilize the knowledge to gain competitive advantage through people Develop and Design HRM system
Research Method (FMM120405)	CO1	Construct appropriate research and sampling designs for research work in real world business and non-business contexts.
	CO2	Clearly identify the business problems and effective ways to answer those problems.
	CO3	understand advanced design, methodologies and analysis in business research methods, including key terms, classifications and systematic applications to the research data and design of a research project.
	CO4	Analyze past literature for in-depth understanding on how the identified problem could be addressed, what are the different theories, design, methods have been followed and developed a conceptual framework in the existing literature.
Entrepreneurship (FMM120406)	CO1	Apply the theories of entrepreneurship and entrepreneurship development framework to analyses and identify entrepreneurial opportunities.



	CO2	Discuss various theories of entrepreneurship and the entrepreneurship development ecosystem in Indian context.
	CO3	Create business plan that captures entrepreneurs and variety of entrepreneur motivations, entrepreneur culture and sectoral opportunities and financing options.
	CO4	To understand the need and importance of Economic development. To study the role of entrepreneurship in the context of economic development. This course prepares participants for a future career as entrepreneurs

Course Outcomes Semester -III M.B. A		
Subject with code		Course Outcome
Summer Internship Project (FMM130401)	CO1	Practical Application of theoretical concepts.
	CO2	Professional Skills
	CO3	Self-Reflection and Learning.
	CO4	Job Readiness.
Strategic Management (FMM130402)	CO1	To know the various facets of Strategic Management in a real-world context.
	CO2	Integrate the aspects of various functional areas of management to develop a strategic perspective.
	CO3	To know the nature of the problems and challenges confronted by the top management team and the approaches required to function effectively as strategists.



	CO4	To understand the process of strategy implementation and the challenges of managing a change.
Legal Aspects of Business (FMM130403)	CO1	Understanding the use of the Acts in common business situations.
	CO2	To go through the various facets of basic case laws of each Act from a legal and managerial perspective.
	CO3	Develop critical thinking by making judgments related to use of various provisions of the Acts in business situations
	CO4	Acquaint with the general business law issues to become more informed, sensitive and effective business leaders. Understand fundamental legal issues pertaining to the business world to enhance their ability to manage businesses effectively
International Business (FMM130404)	CO1	Critically analyze current conditions in developing and emerging markets and evaluate present and future opportunities and risks for international business activities.
	CO2	Creative thinking and innovative strategies to see new global opportunities.
	CO3	Ability to analyses the relationships between international businesses with all external factors to develop a framework for successful decision-making.
	CO4	Explore the students the relevance of various trade theories/models
	CO1	Understanding social and psychological factors and their influence his/her behavior as a consumer.



Consumer Behaviour (FMM130405)	CO2	To go through fundamental concepts associated with consumer and organizational buying behavior.
	CO3	To apply consumer behavior concepts to real world strategic marketing management decision making.
	CO4	Define the conception of consumer behavior and reveal its importance in the context of marketing. Identify factors that influence consumer behavior. Examine the consumer decision-making process.
Digital and Social Media Marketing (FMM130406)	CO1	Make use of Facebook, google ad words, YouTube and email for carrying out digital marketing of real-life products.
	CO2	Illustrate the use of Facebook, google ad words, YouTube and email in various contexts of digital marketing.
	CO3	Design digital media campaign using appropriate mix of Facebook, google ad words, YouTube and email.
	CO4	Students are able to improve their awareness sand knowledge about functioning of local and global business environment and society
Management of Financial Service (FMM130407)	CO1	Developing insights regarding concept and mechanism of various financial services amongst finance students. Imparting knowledge regarding depth and width of Indian financial system and financial services.
	CO2	Comprehend the regulatory framework governing financial services.
	CO3	Enhance analytical and decision-making skills in the context of financial services.
	CO4	Recognize the importance of financial management from a strategic perspective. Compute cost of



		capital and develop innovative financial strategies. Analyze the capital structure decisions through relevant models
Security Analysis and Portfolio Management (FMM130408)	CO1	Develop investment strategies that align with investor objectives and risk tolerance.
	CO2	Apply ethical and professional standards in securities analysis and portfolio management.
	CO3	Utilize financial tools and software for portfolio analysis and performance measurement.
	CO4	Explored to different avenues of investment. Equipped with the knowledge of security analysis. Apply the concept of portfolio management for the better investment. Invest in less risk and more return securities
Management of Industrial Relations and Labour Legislations (FMM130409)	CO1	Understand the dynamics and complexities of industrial relations within organizations.
	CO2	Develop strategies for effective communication and negotiation between management and labor unions.
	CO3	Implement conflict resolution techniques to address labor disputes and maintain harmonious workplace relations.
	CO4	Course is designed to provide the student with a thorough knowledge of legal implications in Human Resource Management. It will help students to understand and handle Industrial Relation. The students would also be able to appreciate the importance and applications of industrial relations and different legislations related the same
	CO1	Understand the importance of compensation in attracting, motivating, and retaining employees.



Compensation Management (FMM130410)	CO2	Design compensation structures that align with organizational goals and objectives.
	CO3	Understand the impact of compensation on employee engagement, satisfaction, and productivity.
	CO4	Recognize how pay decisions help the organization achieve a competitive advantage. Analyze, integrate, and apply the knowledge to solve compensation related problems in organizations

Course Outcomes Semester -IV M.B. A		
Subject with code		Course Outcome
Comprehensive Project (FMM140401)	CO1	Identify and define a complex business problem or opportunity.
	CO2	Demonstrate critical thinking, problem-solving, and decision-making skills in a professional business context.
	CO3	Apply relevant theoretical frameworks and concepts to propose innovative solutions.
	CO4	Develop a detailed project plan and execute it efficiently
Business Ethics & Soft Skill (FMM140402)	CO1	Understand and apply ethical theories and frameworks to analyses and address ethical dilemmas in business.
	CO2	Develop skills in ethical decision-making and demonstrate ethical behavior in professional settings.



	CO3	Demonstrate teamwork and collaboration skills to work effectively in diverse teams.
	CO4	Develop leadership skills and understand the importance of ethical leadership in organizations.
Supply Chain Management (FMM140403)	CO1	Students will acquire a comprehensive understanding of the key principles and practices governing the effective flow of goods, information, and services across a supply chain network.
	CO2	They will be able to analyse and optimize supply chain processes, develop strategies to enhance efficiency, mitigate risks, and improve customer satisfaction.
	CO3	Students will also gain proficiency in employing various tools and techniques for supply chain planning, inventory management, demand forecasting, and supplier relationship management.
	CO4	They will be equipped with the knowledge and skills to apply sustainable and ethical practices in supply chain operations
Product and Brand Management (FMM140404)	CO1	Students will possess a solid understanding of the fundamental principles and strategies involved in effectively managing products and building strong brands.
	CO2	Students will also learn how to create and nurture brand identities, differentiate products in competitive markets, and leverage marketing communication tools to enhance brand awareness and equity.
	CO3	Overall, students will be equipped to make informed decisions to successfully manage products and build powerful brands in dynamic business environments.



	CO4	Understand and differentiate the basic concepts between a product and a brand. Explore the process of creation of a brand. Explain the various qualitative and quantitative measures that help track a brand. Understand Impact of various brand building tools. Develop strategies to be adopted for the product, pricing and distribution aspects of the brand.
Rural Marketing (FMM140405)	CO1	Students will possess a thorough understanding of the unique dynamics and challenges involved in marketing products and services in rural areas.
	CO2	Students will learn how to navigate the complexities of rural distribution networks, including the role of intermediaries and efficient supply chain management.
	CO3	Ultimately, students will be equipped to make informed decisions and implement successful marketing initiatives to reach and engage rural consumers effectively.
	CO4	Explore the various facets of rural marketing and develop an insight into rural marketing regarding different concepts and basic practices in this area MBA SEM IV Course Code Course Name Course Objective Course Outcome. Identify the challenges and opportunities in the field of rural marketing for the budding managers and also expose the students to the rural market environment and the emerging challenges in the globalization of the economies
Mergers & Acquisition (FMM140406)	CO1	Students will acquire a comprehensive understanding of the strategies and techniques involved in reshaping and revitalizing organizations.
	CO2	Students will gain proficiency in identifying restructuring opportunities, assessing risks, and executing successful restructuring plans.



	CO3	Additionally, students will learn about legal and regulatory considerations, ethical implications, and stakeholder management in corporate restructuring.
	CO4	They will also develop skills in financial modeling, valuation, and negotiation to effectively manage the restructuring process.
Risk Management (FMM140407)	CO1	Students will gain a comprehensive understanding of the principles, theories, and practices related to managing financial risks using derivatives.
	CO2	Students will learn to utilize derivative instruments such as futures, options, swaps, and forwards to hedge against risks and optimize portfolio performance.
	CO3	They will gain proficiency in evaluating derivative strategies, analyzing their impact on risk and return, and implementing them effectively.
	CO4	They will be equipped to navigate complex financial markets, make informed risk management decisions, and effectively utilize derivatives to mitigate financial risks.
Human Resource Development (FMM140408)	CO1	Understand the importance of human resource development in achieving organizational goals and maintaining a competitive advantage.
	CO2	Design and implement effective training programs and initiatives to enhance employee skills, knowledge, and performance.
	CO3	Foster employee engagement, motivation, and job satisfaction through effective HR practices.
	CO4	Promote career development and growth opportunities for employees within the organization.



Strategic Human Resource Management (FMM140409)	CO1	Understand the role of strategic human resource management (SHRM) in aligning HR practices with organizational goals and objectives.
	CO2	Develop HR strategies that support the organization's competitive advantage and long-term success.
	CO3	Understand the legal and ethical considerations in SHRM and ensure compliance with applicable laws and regulations.
	CO4	Understand the emerging trends and challenges in SHRM and adapt HR practices accordingly.



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Master of Commerce (M.COM)
Batch (2018-2023)
Program Outcome



PO1: To provide a systematic and rigorous learning and exposure to Banking and Finance related disciplines.

PO2: To train the student to develop conceptual, applied and research skills as well as competencies required for effective problem solving and right decision making in routine and special activities relevant to financial management and Banking Transactions of a business.

PO3: To acquaint a student with conventional as well as contemporary areas in the discipline of Commerce.

PO4: To enable a student well versed in national as well as international trends.

PO5: To facilitate the students for conducting business, accounting and auditing practices, role of regulatory bodies in corporate and financial sectors nature of various financial instruments.

PO6: To provide in-depth understanding of all core areas specifically Advanced Accounting, International Accounting, Management, Security Market Operations and Business Environment, Research Methodology and Tax planning.

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Master of Commerce (M.COM)

Batch (2018-2023)

Program Specific Outcome (PSO)



Program Specific Outcome

PSO1: Develop an ability to apply knowledge acquired in problem solving.

PSO2: Ability to work in teams with enhanced interpersonal skills and communication.

PSO3: The students can work in different domains like Accounting, Taxation, HRM, Banking and Administration.

PSO4: Ability to work in MNCs as well as pvt, and public companies.

PSO5: To develop team work, leadership and managerial and administrative skills.



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Master of Commerce (M.COM)
Batch (2018-2023)
Course Outcome (CO)



Students of all undergraduate Master of Commerce degree program at the time of graduate will be able to learn.

Course Outcomes Semester -1 M.COM		
Subject with code		Course Outcome
Management Concept & Theory (FCM 210101)	CO1	Understand the concepts related to Business
	CO2	Demonstrate the roles, skills, and functions of management.
	CO3	Understand the complexities associated with the management of human resources in the organizations and integrate the learning in handling these complexities.
	CO4	Analyze the challenges and opportunities associated with organizational change.
Business Environment and Policy (FCM 210102)	CO1	To make the students aware about the Business and Business Environment.
	CO2	To develop entrepreneurial awareness among students
	CO3	Analyze the challenges and opportunities of conducting business in an international context
	CO4	Understand the process of policy implementation and its role in achieving organizational goals.
Financial Management (FCM 210103)	CO1	An understanding of the role of financial management in business firms and the essentials of corporate finance.
	CO2	Understand and apply capital budgeting techniques, and apply the theory of capital



		structure to assess a firm's leverage and the cost of capital.
	CO3	The analytical ability to develop and utilize accounting data, financial data, and other information to solve complex and unstructured business.
	CO4	Develop strategies for managing and mitigating financial risks
Corporate Communication (FCM 210104)	CO1	To make the students aware about the business communication.
	CO2	To understand the process and importance of communication.
	CO3	Demonstrate proficiency in written and oral communication skills
	CO4	Enhance interpersonal communication skills for effective collaboration within teams.
Corporate Financial Accounting (FCM 210105)	CO1	This course aims to enlighten the students on the accounting procedures followed by the Companies.
	CO2	To impart knowledge about holding company accounts, amalgamation, absorption and reconstruction of company
	CO3	Analyze financial statements to assess the financial health and performance of a corporation.
	CO4	Understand the accounting principles for consolidated financial statements.



Course Outcomes Semester -II M.COM		
Subject with code		Course Outcome
Marketing Management (FCM220101)	CO1	Students shall be able to get introduced and understand the knowledge of marketing management with the need, importance and process of marketing planning and control, enhancing their ability for the dynamic nature of marketing.
	CO2	Attainment of organizational marketing goals.
	CO3	Understand the concept of market segmentation.
	CO4	Develop strategies for effective channel management and distribution.
Elements of Banking (FCM220102)	CO1	Inculcates the knowledge of core Banking and Insurance sector.
	CO2	Provides knowledge about Banking and Insurance business in India and how it influences the economy.
	CO3	Understand the importance of banks in facilitating economic activities.
	CO4	Recognize the impact of technology on the transformation of banking and insurance.
Cost Accounting (FCM220103)	CO1	Impacts the knowledge of various costs on the basis of element behavior and functions.
	CO2	Helps in ascertaining the cost of material and labor.
	CO3	Understand and apply different costing methods, such as job costing, process costing, and activity-based costing.



	CO4	Develop budgets and analyze variances between actual and budgeted costs.
Tax Planning (FCM220104)	CO1	Helps students to know Various Tax Procedure
	CO2	Updates students with Current Taxation Policies
	CO3	Understand the computation of taxable income for individuals and businesses.
	CO4	Understanding of the principles and concepts of taxation
Business Ethics and Soft Skills (FCM220105)	CO1	Studies business ethics as a reflection of standard of business that either an individual or business uses when conducting transactions.
	CO2	Increases the accountability of the company and avoids massive disasters before they occur
	CO3	Define business ethics and understand its importance in organizational decision-making.
	CO4	Develop the ability to build and maintain professional relationships



Course Outcomes Semester -III M.COM		
Subject with code		Course Outcome
Business Research &Methods (FCM230101)	CO1	Delivers to students research-oriented study and brings applicability of research in practical application.
	CO2	Creates awareness amongst students on importance of RM and it provides skills for all round development.
	CO3	Develop a clear research design, including the formulation of research questions and hypotheses.
	CO4	Understand different sampling techniques and their application in business research.
International Business Environment (FCM230102)	CO1	Creates understanding on how globalization has brought about an increasing 'connectedness' of businesses, markets, people and information across countries
	CO2	Creates understanding of the different reason for currency fluctuations & concept of comparative cost advantage.
	CO3	Understand different global economic systems, such as capitalism, socialism, and mixed economies.
	CO4	Develop problem-solving skills in the context of international business challenges.
Advanced Financial Accounting (FCM230103)	CO1	Students will demonstrate proficiency in preparing and interpreting complex financial statements in accordance with international accounting standards.
	CO2	Upon completion, students will be equipped to apply advanced accounting principles to address



		contemporary financial reporting challenges in diverse business contexts.
	CO3	Participants will gain a comprehensive understanding of advanced topics in financial accounting, enabling them to analyze and communicate financial information effectively.
	CO4	Understand the accounting treatment of subsidiaries, associates, and joint ventures.
Organizational Behavior (FCM230104)	CO1	Provides the students' knowledge about fundamentals of Organizational Behaviour and its various Theories.
	CO2	Inculcates in students the practice of Organization culture and change management.
	CO3	Enhances the practice of organizations development among the students
	CO4	Develop a commitment to continuous learning in the field of organizational behavior.
Security Analysis & Portfolio Management (FCM230105)	CO1	Enables a financial expert determine the value of assets in a portfolio.
	CO2	Creates understanding of evaluation of securities with the help of certain fundamental business factors.
	CO3	Understand the principles of fundamental analysis to evaluate the intrinsic value of securities.
	CO4	Recognize ethical considerations in security analysis and portfolio management



Course Outcomes Semester -1V M.COM		
Subject with code		Course Outcome
Marketing Research (FCM240101)	CO1	Students equipped with how to conduct marketing research/projects in their work place and/or in personal career advancement in research:
	CO2	Creates understanding of the concept of research.
	CO3	Understand the role and importance of marketing research in the decision-making process.
	CO4	Develop a commitment to continuous learning in the field of marketing research.
Financial Markets (FCM240102)	CO1	Enables understanding about financial market.
	CO2	Understand financial market and source of fund.
	CO3	Explore the primary functions of financial markets, including capital allocation and risk management.
	CO4	Develop a commitment to continuous learning in the field of financial markets.
Accounting for Managers (FCM240103)	CO1	Apply accounting principles to analyze and interpret business transactions.
	CO2	Develop budgeting and forecasting skills for effective financial management in a managerial role.
	CO3	Understand the importance of internal controls in financial reporting and preventing fraud.
	CO4	Identify and address ethical issues that may arise in accounting and financial management
	CO1	Student shall be able to learn and understand the importance of consumer Behaviour in marketing



Consumer Behaviour (FCM240104)		and differential consumer Behaviour in India context.
	CO2	Student will understand about consumer rights.
	CO3	Understand how cultural differences and globalization affect consumer behavior in different international markets.
	CO4	Enhance communication skills to effectively convey marketing messages to diverse consumer segments
Strategic Management (FCM240105)	CO1	To describe the role of strategic management and the strategic management process.
	CO2	To understand about the techniques to scan an environment and the role of environment scanning in hurdle less strategic management of an organization.
	CO3	To understand the importance of strategy formulation and strategy implementation.
	CO4	To understand and formulate different strategies at business and corporate level.



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B.A. ECONOMICS

Bachelor Of Arts (Economics) Program Outcomes (POs)



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- PO1: Critical thinking skills:** Graduates will be able to analyze complex information, evaluate arguments, and think critically to solve problems.
- PO2: Effective communication:** Graduates will demonstrate proficiency in written and oral communication skills, including the ability to express ideas clearly and persuasively.
- PO3: Research skills:** Graduates will be able to conduct independent research, gather relevant data, and analyze information to support their arguments.
- PO4: Cultural awareness:** Graduates will have a deep understanding of diverse cultures, perspectives, and traditions, fostering empathy and appreciation for cultural differences. ➤
- PO5: Ethical reasoning:** Graduates will develop ethical reasoning skills and demonstrate an understanding of ethical issues within their field of study.
- PO6: Creative thinking:** Graduates will be able to think creatively, generate innovative ideas, and apply artistic principles to their work.
- PO7: Collaboration and teamwork:** Graduates will possess the ability to work effectively in teams, demonstrating leadership skills and contributing to collective goals.
- PO8: Global perspective:** Graduates will have an awareness of global issues and their impact, recognizing the interconnectedness of the world.
- PO9: Adaptability and flexibility:** Graduates will be able to adapt to changing environments, learn new skills, and embrace lifelong learning.
- PO10: Problem-solving skills:** Graduates will be equipped with the skills to identify problems, propose solutions, and make informed decisions.



Bachelor Of Arts (Economics)

Program Specific Outcomes (PSOs)



PSO1: Literary Knowledge: Demonstrate a comprehensive understanding of major literary periods, movements, genres, and canonical works in English literature

PSO2 Multicultural Perspectives: Explore and appreciate the diversity of voices and perspectives in literature, including works by authors from different cultural, ethnic, and geographic backgrounds.



Bachelor Of Arts (Economics)

Course Outcomes (COs)



Course Outcomes Semester -I BA Economics		
Subject with code		Course Outcomes
Micro Economics 1041	CO1	Understand about Methodology in economics. Perform supply and demand analysis to Analyze the impact of economic events on Markets,
	CO2	Analyze the behavior of consumers in terms of the demand for products,
	CO3	Analyze the performance of firms under different market structures,
	CO4	Recognize market failure and the role of government in dealing with those failures,
Money & Banking 1042	CO1	Explain and discuss why people hold money
	CO2	Understand the workings of the monetary policy
	CO3	Describe the working of commercial banks
	CO4	Understand the role and functioning of RBI

Course Outcomes Semester -II BA Economics		
Subject with code		Course Outcomes
Micro Economics-1 2041	CO1	Understand about Methodology in economics. * Perform supply and demand analysis to analyze the impact of economic events on Markets, Recognize market failure and the role of government in dealing with those failures, Explain how input markets work,
	CO2	Analyze the behavior of consumers in terms of the demand for products, * Analyze the performance of firms under different market structures,
	CO3	Analyze the behavior of consumers in terms of the demand for products, Analyze the performance of firms



		under different market structures,
	CO4	Analyze the behavior of consumers in terms of the demand for products, Analyze the performance of firms under different market structures,
Money & Banking 2042	CO1	Explain and discuss why people hold money
	CO2	Understand the workings of the monetary policy
	CO3	Describe the working of commercial banks
	CO4	Understand the role and functioning of RBI

Course Outcomes Semester -III ,BA Economics		
Subject with code		Course Outcomes
Micro Economics-1 BA3043	CO1	Explain and discuss why people hold money
	CO2	Understand the working of the monetary policy
	CO3	.Describe the working of commercial banks
	CO4	Understand the role and functioning of RBI
Indian Economy BA3044	CO1	Explain the financial markets and financial intermediary institutions
	CO2	Explain Fundamentals of Banking Management Explain risk management tools.
	CO3	Defines the functions of the financial system,Explains financial intermediaries
	CO4	Defines the financial system
Economic System BA3045	CO1	Explain the financial markets and financial intermediary institutions
	CO2	Explain risk management tools.
	CO3	Defines the functions of the financial system, Explains financial intermediaries
	CO4	Defines the financial system, Explain Fundamentals of Banking Management



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Course Outcomes Semester -IV, BA Economics		
Subject with code		Course Outcomes
Micro Economics-1 BA4043	CO1	Analyze the behavior of consumers in terms of the demand for products, * Analyze the performance of firms under different industries market structures,
	CO2	Understand about Market Structure in economics. Perform supply and demand analysis to analyze the impact of economic events on Markets
	CO3	Explain how input markets work,
	CO4	Recognize market failure and the role of government in dealing with those failures,
Indian Economy BA3044	CO1	This course is designed to provide the students with a thorough understanding of the importance of Indian economies.
	CO2	It aims to provide the students with an introduction to understanding the concept of the Economy,
	CO3	Theories of money supply and demand and working of fiscal policy.
	CO4	It provides an insight into the Distribution system.
Economic System BA3045	CO1	Understand about Methodology in economics.
	CO2	Perform supply and demand analysis to analyze the impact of economic events on Markets,
	CO3	Analyze the behavior of consumers in terms of the demand for products,
	CO4	Analyze the performance of firms under different market structures,



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Course Outcomes Semester –V, BA Economics		
Subject with code		Course Outcome
Macro Economics-II BA5056	CO1	Explains national income, calculation methods of national income, and concepts related to national income.
	CO2	Relates factors determine national income such as consumption, saving, and investment.
	CO3	Defines concepts related to national income., Compares calculation methods of national income.
	CO4	Interprets macroeconomic issues such as money, foreign exchange, inflation, unemployment, economic growth and foreign trade
	CO1	Comprehensive understanding of the distinct features and cultural influences shaping Indo-Anglican fiction.
	CO2	Enhanced ability to analyze and appreciate the varied narrative techniques and thematic elements present in Indo-Anglican literary works.
	CO3	Proficiency in critically engaging with Indo-Anglican fiction, demonstrating a nuanced interpretation and evaluation of the genre.
	CO4	Students will be able to evaluate the societal and literary impact of selected works and conduct research on the same.
INTERNATIONAL ECONOMICS BA 5047	CO1	Be familiar with the main economic theories and models of international trade,
	CO2	Be aware of the likely distributional consequences of trade and thus of conflicting interests within an economy regarding trade liberalization,
	CO3	Understand economists' arguments concerning trade policy and its analysis,
	CO4	Historical factors in the emergence of the IEO



Public Economics BA5048	CO1	Students will also learn about the method of how Economics-
	CO2	how economists think and how they make theories to understand and solve human issues.
	CO3	Externalities, public goods,
	CO4	collective action on welfare and efficiency.
Development and Environmental Economics BA5049	CO1	Economic developers are well aware of the live-work-play dynamic affecting downtowns and many other major employment centers across the country.
	CO2	This study of 90 employment centers, including 48 central business districts,
	CO3	Offers a rigorous analysis of this dynamic.
	CO4	The following are some important and main objectives of economic development
Demography BA5050	CO1	Outcomes define the principal concepts of demography.
	CO2	Explain the importance of statistics in demography.
	CO3	Define the demography. Restate the subject of demography. Tell population theories, processes, structure and characteristics.
	CO4	Explain the population theories. Define the born and death processes. Identify the structure of the population and its characteristics. Explain migration and productivity.
Course Outcomes Semester –VI , BA Economics		
Subject with code		Course Outcome
Macro Economics-II BA6046	CO1	Explains national income, calculation methods of national income, and concepts related to national income.
	CO2	Relates factors determine national income such as consumption, saving, and investment.
	CO3	Defines concepts related to national income., Compares calculation methods of national income.



	CO4	Interprets macroeconomic issues such as money, foreign exchange, inflation, unemployment, economic growth and foreign trade
INTERNATIONAL ECONOMICS BA 6047	CO1	Be aware of the likely distributional consequences of trade.
	CO2	Be familiar with the main economic theories and models of international trade,
	CO3	Conflicting interests within an economy regarding trade liberalization,
	CO4	Understand economists' arguments concerning trade policy and its analysis,
Advance Public Finance BA6048	CO1	Analytical Reasoning and Data Analysis. ...
	CO2	Different Economic Systems and Schools. ...
	CO3	Public policy analysis.
	CO4	Understand functioning of important institutions.
Development and Environmental Economics BA6049	CO1	Economic developers are well aware of the live-work-play dynamic affecting downtowns and many other major employment centers across the country.
	CO2	This study of 90 employment centers, including 48 central business districts, offers a rigorous analysis of this dynamic. The authors first present a definition of vibrancy and show its connections to the fields of urban economics, economic geography, and urban design.
	CO3	The authors offer face-valid measures of vibrancy that practitioners can replicate in their jurisdictions. Most important, the authors show that vibrancy is an important factor influencing economic development.
	CO4	The vibrancy index measured with 2010 data is positively associated with subsequent employment growth, property



		inventory expansion (tax base), and income growth.
Demography BA 6050	CO1	Outcomes define the principal concepts of demography. Explain the importance of statistics in demography.
	CO2	Define the demography. Restate the subject of demography.
	CO3	Tell population theories, processes, its structure and its characteristics. Explain the population theories.
	CO4	Define the born and death processes. Identify the structure of population and its characteristics. Explain migration and productivity. Define the migration. Realize the migration measurement.



B.A. ENGLISH

Bachelor of Arts (ENGLISH) Program Outcomes (POs)



B. A. ENGLISH

- PO1:
Critical thinking skills: Graduates will be able to analyze complex information, evaluate arguments, and think critically to solve problems.
- PO2:
Effective communication: Graduates will demonstrate proficiency in written and oral communication skills, including the ability to express ideas clearly and persuasively.
- PO3:
Research skills:
Graduates will be able to conduct independent research, gather relevant data, and analyze information to support their arguments.
- PO4:
Cultural awareness:
Graduates will have a deep understanding of diverse cultures, perspectives, and traditions, fostering empathy and appreciation for cultural differences.
- PO5:
Ethical reasoning:
Graduates will develop ethical reasoning skills and demonstrate an understanding of ethical issues within their field of study.
- PO6:
Creative thinking:
Graduates will be able to think creatively, generate innovative ideas, and apply artistic principles to their work.
- PO7:
Collaboration and teamwork:
Graduates will possess the ability to work effectively in teams, demonstrating leadership skills and contributing to collective goals.
- PO8:



Global perspective:

Graduates will have an awareness of global issues and their impact, recognizing the interconnectedness of the world.

- PO9:

Adaptability and flexibility:

Graduates will be able to adapt to changing environments, learn new skills, and embrace lifelong learning.

- PO10:

Problem-solving skills:

Graduates will be equipped with the skills to identify problems, propose solutions, and make informed decisions.



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Bachelor of Arts (ENGLISH)
Program Specific Outcomes
(PSOs)



PSO 1

Literary Knowledge:

Demonstrate a comprehensive understanding of major literary periods, movements, genres, and canonical works in English literature.

PSO 2

Multicultural Perspectives:

Explore and appreciate the diversity of voices and perspectives in literature, including works by authors from different cultural, ethnic, and geographic backgrounds.



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Bachelor of Arts (ENGLISH) Course Outcomes (COs)



Course Outcomes Semester -I BA ENGLISH

Subject with code		Course Outcomes
Compulsory English BA1001	CO1	Improved Language Proficiency and effective communication skills.
	CO2	Enhanced Reading Comprehension and expanded Vocabulary and Grammar Knowledge.
	CO3	Developed Writing Skills and critical thinking abilities.
	CO4	Improved reading comprehension skills, including the ability to analyze and interpret diverse texts.
Introduction to English Literature BA1011	CO1	After learning the course, the students should be able to: Understand and explain the historical context of the literary period.
	CO2	Identify and describe major literary periods and movements in English literature.
	CO3	Examine how literature reflects and responds to societal changes.
	CO4	Recognize the role of literature in shaping cultural values and aesthetic experiences.
Introduction to Poetry BA1012	CO1	By the end of the course, students should be able to: Appreciate and discuss the contributions of poets from diverse backgrounds, recognizing the importance of cultural and individual perspectives in poetry.
	CO2	Engage in critical discussions about poetry, articulating interpretations and responding thoughtfully to peers' analyses.
	CO3	Recognize and discuss connections between poetry and other art forms.
	CO4	Develop a lifelong appreciation for poetry as an art form, recognizing its ability to convey complex emotions, ideas, and experiences.



Course Outcomes Semester –II BA ENGLISH		
Subject with code		Course Outcome
Compulsory English BA2001	CO1	Developed sensitivity to diverse perspectives and cultural contexts. It further helps them to prepare for various competitive exams and to keep up with the increasing demand of English in Indian society.
	CO2	The practical work improves their communication and writing skills, and at the same time equipping them to use modern forms of communication.
	CO3	Developed effective oral communication skills for presentations and public speaking.
	CO4	Students will be able to understand the role of English as a global language and its implications for communication.
Introduction to The Age of Shakespeare And Jacobean Age BA2011	CO1	By the end of the course, students should be able to: Developed critical thinking skills through the interpretation and analysis of complex literary texts.
	CO2	Developed awareness of cultural diversity and societal norms reflected in the literature of the Age of Shakespeare and Jacobean Age.
	CO3	Critically engage with religious and philosophical themes in literary works, recognizing their influence on the literature of the time.
	CO4	Students will be able to evaluate the works of Shakespearean and Jacobean writers, identifying common themes and stylistic elements.
Introduction to Literary Forms BA2012	CO1	Students will be able to classify and recall various literary forms, including poetry, prose, drama, and their sub-genres.
	CO2	Students will be able to summarize the distinguishing features of different literary forms and explain their significance.
	CO3	Students will be able to critically analyze and evaluate how the choice of literary form influences the meaning and impact of a given text.
	CO4	Students will be able to evaluate how the author's choice of literary form contributes to the overall effectiveness and impact of a work.



Course Outcomes Semester –III BA ENGLISH

Subject with code		Course Outcome
Compulsory English	CO1	Students will be able to use a diverse vocabulary and grammatical structures appropriately in written and spoken communication.
	CO2	Developed effective communication skills for various purposes, such as academic writing, presentations, and interpersonal communication.
	CO3	Students will be able to explore and understand diverse cultural perspectives through literature, media, and language use.
	CO4	Students will be able to set goals for ongoing language development and self-directed learning.
British Fiction BA3013	CO1	Students will be able to articulate how historical and cultural factors influence the themes and styles of British fiction across different periods.
	CO2	Students will be able to interpret and explain the central themes of chosen British novels, connecting them to broader societal and cultural contexts.
	CO3	Students will be able to apply literary theories (e.g., feminist, postcolonial) to critically analyze British fiction, gaining a deeper understanding of textual nuances.
	CO4	Students will be able to assess how British novels have influenced and reflected cultural and social changes, considering their enduring relevance.
Literature in English Drama-Comedy BA3014	CO1	Students will be able to identify and recall the defining features of comedic elements in English drama.
	CO2	Students will be able to apply their understanding of comedic elements to critically analyze English plays, discerning how humor contributes to the overall narrative.
	CO3	Students will be able to compare and contrast comedic plays from various periods, noting changes in style, themes, and societal influences.
	CO4	Students will be able to actively participate in discussions, expressing emotional responses to the humor and thematic content in comedic plays.
Corse in Literary Criticism	CO1	Students will be able to demonstrate advanced skills in analyzing literary texts from various critical perspectives.



BA3015	CO2	Students will be able to apply key literary theories and critical approaches to the interpretation of literature.
	CO3	Students will be able to conduct effective research in the field of literary criticism.
	CO4	Students will be able to engage in constructive and informed discussions about literary criticism.

Course Outcomes Semester –IV BA English		
Subject with code		Course Outcome
Compulsory English BA4001	CO1	Proficiency in grammar and vocabulary.
	CO2	Enhanced writing and communication abilities.
	CO3	Expanded literary knowledge and analytical thinking to engage with and evaluate different forms of written expression in English.
	CO4	Students will be able to engage in critical reading, analyzing texts for meaning, tone, and underlying messages
Indo-Anglican Fiction BA4013	CO1	Comprehensive understanding of the distinct features and cultural influences shaping Indo-Anglican fiction.
	CO2	Enhanced ability to analyze and appreciate the varied narrative techniques and thematic elements present in Indo-Anglican literary works.
	CO3	Proficiency in critically engaging with Indo-Anglican fiction, demonstrating a nuanced interpretation and evaluation of the genre.
	CO4	Students will be able to evaluate the societal and literary impact of selected works and conduct research on the same.
Literature In English Drama-Tragedy BA4014	CO1	In-depth understanding of the essential features and historical development of English tragic drama.
	CO2	Proficiency in analysing and discussing the works of major English playwrights in the tragic genre.
	CO3	Ability to critically assess tragic plays, identifying themes, techniques, and societal reflections inherent in English tragic literature.
	CO4	Students will be able to explain the themes and structural elements commonly found in tragic drama.



Literary Criticism and Rhetoric BA4015	CO1	Students will be able to understand the historical and philosophical contexts that led to the development of literary criticism and its practice in different traditions and periods.
	CO2	Learners will be able to grasp a wide range of literary philosophers and critics whose works had informed and shaped the discourse of literary theory.
	CO3	Learners will be able to apply various theoretical frameworks and concepts to Literary and cultural texts.
	CO4	Students will be able to analyze the emotional and psychological effects of tragic elements on the audience.

Course Outcomes Semester –V BA English		
Subject with code		Course Outcomes
Compulsory English BA5001	CO1	Students will be able to demonstrate comprehension and analysis of short stories, applying appropriate grammatical structures and idiomatic expressions.
	CO2	Students will be able to showcase adeptness in translating texts accurately and preserving the intended meaning and style in both languages.
	CO3	Students will be able to acquire a holistic appreciation of English literature, with the ability to navigate and employ grammatical rules, idiomatic phrases, and effective translation techniques in various linguistic contexts.
	CO4	Students will be able to create a project (e.g., essay, presentation, or creative work) that showcases language proficiency and literary understanding.
Social History of England & America BA5011	CO1	Students will be able to gain a comprehensive insight into the social history of England and America, critically evaluating historical sources and events to identify underlying trends and shifts.
	CO2	Students will be able to demonstrate the ability to analyze the impact of various social, economic, and political factors



		on the development and transformation of English and American societies.
	CO3	Students will be able to apply a multidimensional approach to interpret the complexities of social history, contributing to a deeper understanding of the interconnectedness of societies in England, America, and the world.
	CO4	Students will be able to apply an understanding of social changes to interpret political and economic shifts.
Introduction to Restoration Age & Age of Pope BA5012	CO1	Students will be able to demonstrate a comprehensive understanding of the Restoration Age and the Age of Pope, discerning their unique literary characteristics and themes.
	CO2	Students will be able to articulate critical insights into the works of prominent writers from these periods, highlighting their contributions to the development of English literature.
	CO3	Students will be able to engage in scholarly discussions by evaluating the societal and cultural dynamics that influenced the literary landscape during the Restoration Age and the Age of Pope.
	CO4	Students will be able to conduct a project (e.g., essay, presentation, or creative work) that reflects a nuanced understanding of the historical and literary nuances of the period.
Indian Writing in English Poetry and Drama BA5013	CO1	Ability to analyze and interpret Indian English poetry and drama with literary acumen.
	CO2	Enhanced understanding of the historical and cultural influences on Indian English literary works.
	CO3	Cultivation of critical thinking and writing skills for insightful engagement with Indian Writing in English.
	CO4	Students will be able to analyze the literary techniques used by poets and playwrights in conveying cultural and social messages. Also, they will be able to conduct research on the Indian Literature.
Introduction to American Literature BA5014	CO1	Proficiency in recognizing and discussing key literary periods and movements in American literature.
	CO2	Increased understanding of the diverse cultural and historical contexts that shape American literary traditions.
	CO3	Ability to critically analyse and articulate interpretations of American literary works, demonstrating nuanced insights.
	CO4	Students will be able to evaluate the impact of American literature on societal and cultural narratives which will help them to conduct research on the same.
History of English Language	CO1	Comprehensive knowledge of the historical phases and



BA5015		significant milestones in the evolution of the English language.
	CO2	Enhanced awareness of the global impact and diverse influences that have shaped the English language throughout its history.
	CO3	Proficiency in analysing linguistic structures and identifying key linguistic shifts in the development of English.
	CO4	Students will be able to analyze the linguistic impact of external influences on English.

Course Outcomes Semester –VI BA English

Subject with code		Course Outcomes
Compulsory English BA6001	CO1	Mastery of grammar rules and application in speechwriting for clear and precise communication.
	CO2	Proficiency in analysing short stories and speeches, identifying literary elements and their impact on communication.
	CO3	Ability to craft compelling short stories and speeches, showcasing creativity, coherence, and linguistic accuracy.
	CO4	Developed effective communication skills for various purposes, such as academic writing, presentations, and interpersonal communication.
Introduction to Romantic and Victorian Age BA6011	CO1	Comprehensive understanding of the significant literary, cultural, and historical features characterizing the Romantic and Victorian Ages.
	CO2	Enhanced ability to analyse and appreciate the literary works of this period, discerning key themes and literary techniques.
	CO3	Proficiency in critically engaging with Romantic and Victorian literature, offering nuanced interpretations and evaluations based on historical and cultural contexts.
	CO4	Students will be able to create a project (e.g., essay, research, presentation, or creative work) that reflects a nuanced understanding of the cultural and literary aspects of the period.
Introduction to Modern Age BA6012	CO1	Comprehensive understanding of the significant shifts and developments in literature during the Modern Age, discerning its distinct features and innovations.



	CO2	Enhanced ability to analyze and appreciate the diverse literary works, styles, and philosophies characteristic of the Modern Age.
	CO3	Proficiency in critically engaging with Modern Age literature, offering insightful interpretations and evaluations based on historical, cultural, and literary contexts.
	CO4	Students will be able to create a project (e.g., essay, research, presentation, or creative work) that reflects a nuanced understanding of the cultural and literary aspects of the Modern Age.
Indian Literature in English Translation BA6013	CO1	Comprehensive understanding of Indian literary traditions and their representation through translation into English, enhancing cultural appreciation and linguistic diversity.
	CO2	Enhanced ability to critically evaluate and compare the original works with their translated versions, acknowledging the impact of language and cultural context on literary interpretation.
	CO3	Proficiency in engaging with translated Indian literature in English, cultivating a broader perspective and informed analysis of the works and their cross-cultural relevance.
	CO4	Students will be able to conduct research and presentations on the Indian Literature and Translation studies.
Literary Criticism & Theory BA6014	CO1	Profound understanding of key literary criticism and theoretical concepts, enriching the ability to analyze and critique literary works.
	CO2	Enhanced proficiency in utilizing various critical frameworks and methodologies to interpret literature, facilitating a deeper appreciation of its complexity and diversity.
	CO3	Ability to engage in sophisticated literary analysis and contribute to academic discourse by applying diverse theoretical approaches to literary texts.
	CO4	Students will be able to evaluate the strengths and limitations of different literary theories in interpreting diverse texts.
Spoken English BA6015	CO1	Improved pronunciation and intonation, leading to clear and comprehensible spoken English.
	CO2	Expanded vocabulary and usage of idiomatic expressions for more natural and expressive communication.
	CO3	Increased confidence and competence in engaging in diverse oral communication settings in English.



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CO4	Students will be able to create and deliver a well-organized spoken presentation on a given topic.
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BA GUJARATI

BACHELOR OF ARTS (GUJARTI)

Program Outcomes (POs)



- PO1: Students will become sensitized to issues like marginalization and subjugation of women through the study of the Feminist and Dalit Literatures.
નારીવાદી અને દલિત સાહિત્યના અભ્યાસ દ્વારા વિદ્યાર્થીઓ મહિલાઓને હાંસિયામાં ધકેલવા અને વશીકરણ જેવા મુદ્દાઓ પ્રત્યે સંવેદનશીલ બનશે.
- PO2: Students will better ability for literary appreciation.
વિદ્યાર્થીઓમાં સાહિત્યિક પ્રશંસા માટે વધુ સારી ક્ષમતા હશે.
- PO3: Students will develop understanding about the interrelation between literature and art
વિદ્યાર્થીઓ સાહિત્ય અને કલા વચ્ચેના આંતરસંબંધ વિશે સમજણ કેળવશે
- PO4: Students will learn to attach importance to human Values.
વિદ્યાર્થીઓ માનવીય મૂલ્યોને મહત્વ આપતા શીખશે.
- PO5: Students will organize the views and format them into a seminar of about twenty five to thirty pages use a working knowledge of research methodology.
વિદ્યાર્થીઓ મંતવ્યો ગોઠવશે અને તેમને લગભગ પચીસ થી ત્રીસ પૃષ્ઠોના સેમિનારમાં ફોર્મેટ કરશે, જેમાં સંશોધન પદ્ધતિના કાર્યકારી જ્ઞાનનો ઉપયોગ કરવામાં આવશે.
- PO6: The Programme has the purpose to revive the classical language, its dialects and the values and culture incorporated in the language. It enables the students to develop literary viewpoint and understanding.
આ કાર્યક્રમનો હેતુ શાસ્ત્રીય ભાષા, તેની બોલીઓ અને ભાષામાં સમાવિષ્ટ મૂલ્યો અને સંસ્કૃતિને પુનર્જીવિત કરવાનો છે. તે વિદ્યાર્થીઓને સાહિત્યિક દૃષ્ટિકોણ અને સમજ વિકસાવવા માટે સક્ષમ બનાવે છે.



- PO7: The students develop Critical awareness, aesthetics and art related point of view. It also enables students to conduct research and comparative study and indulge in creative writing to further contribute to the language and literature.
- વિદ્યાર્થીઓ વિવેચનાત્મક જાગૃતિ, સૌંદર્ય શાસ્ત્ર અને કલા સંબંધિત દૃષ્ટિકોણ વિકસાવે છે. તે વિદ્યાર્થીઓને સંશોધન અને તુલનાત્મક અભ્યાસ કરવા અને ભાષા અને સાહિત્યમાં વધુ યોગદાન આપવા માટે સર્જનાત્મક લેખનમાં વ્યસ્ત રહેવા માટે પણ સક્ષમ બનાવે છે.
- PO8: The students will have better exposure to world literature.
- વિદ્યાર્થીઓ વિશ્વ સાહિત્ય સાથે વધુ સારી રીતે સંપર્કમાં રહેશે.



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BACHELOR OF ARTS (GUJARTI)

Program Specific Outcomes (PSO)

- PSO1: performance and develop a positive attitude towards life.
- પ્રદર્શન અને જીવન પ્રત્યે સકારાત્મક વલણ કેળવવું.
-
- PSO2: Students will perform in the fields such as Teaching, Creative writing, Reporting, Translations, Journalisms etc.
- વિદ્યાર્થીઓ શિક્ષણ, સર્જનાત્મક લેખન, અહેવાલ, અનુવાદ, પત્રકારત્વ વગેરે જેવા ક્ષેત્રોમાં પ્રદર્શન કરશે.
- PSO3: The Programme has the purpose to revive the classical language, its dialects and the values and culture incorporated in the language. It enables the students to develop literary viewpoint and understanding. The students develop aesthetics and art related point of view. It also enables students to conduct research and comparative study and indulge in creative writing to further contribute to the language and literature. The programme stresses on Socio-cultural aspect of literature and language and inculcates values as well as humanitarian approach.
- આ કાર્યક્રમનો હેતુ શાસ્ત્રીય ભાષા, તેની બોલીઓ અને ભાષામાં સમાવિષ્ટ મૂલ્યો અને સંસ્કૃતિને પુનર્જીવિત કરવાનો છે. તે વિદ્યાર્થીઓને સાહિત્યિક દૃષ્ટિકોણ અને સમજ વિકસાવવા માટે સક્ષમ બનાવે છે. વિદ્યાર્થીઓ સૌંદર્ય શાસ્ત્ર અને કલા સંબંધિત દૃષ્ટિકોણ વિકસાવે છે. તે વિદ્યાર્થીઓને સંશોધન અને તુલનાત્મક અભ્યાસ કરવા અને ભાષા અને સાહિત્યમાં વધુ યોગદાન આપવા માટે સર્જનાત્મક લેખનમાં વ્યસ્ત રહેવા માટે પણ સક્ષમ બનાવે છે. આ કાર્યક્રમ સાહિત્ય અને ભાષાના સામાજિક-સાંસ્કૃતિક પાસાઓ પર ભાર મૂકે છે અને મૂલ્યો તેમજ માનવતાવાદી અભિગમ કેળવે છે.



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BA GUJARATI

BACHELOR OF ARTS (GUJARTI)

Course Outcomes (CO)



Course Outcomes Semester-I B. A Gujarati		
Subject with code		Course Outcome
PDHYKRUTINO ABHYAS- MADHYAKALIN BA1021	CO1	મધ્યકાલીન યુગના સાહિત્ય વિશે માહિતગાર થાય .
	CO2	મધ્યકાલીન પદો વિશે જાણશે .
	CO3	મધ્યકાલીન ગુજરાતી સાહિત્યના પદોનું ગાન કરી જ્ઞાનમાર્ગીમય બનશે .
	CO4	ગુજરાતી વ્યાકરણ છંદ વિશે સમજશે.
GDHYKRUTINO ABHYAS – ARVACHIN BA1022	CO1	અર્વાચીન યુગના સાહિત્ય વિશે માહિતગાર થાય
	CO2	ગદ્યના પ્રકારોનો સ્વરૂપલક્ષી પરિચય મેળવશે
	CO3	વિદ્યાર્થીઓ ટૂંકીવાર્તા વિશે જાણશે અને માહિતગાર થાય.
	CO4	અર્વાચીન ગુજરાતી વ્યાકરણ અલંકાર વિશે જાણે.
SAHITYAKRUTI NO ABHYAS BA1003	CO1	ગુજરાતી સાહિત્ય વિશે માહિતગાર થાય.
	CO2	વિદ્યાર્થીઓ રેખાચિત્રો વિશે જાણશે .
	CO3	વિદ્યાર્થીઓ સાહિત્ય સ્વરૂપ અને સર્જકો વિશે જાણશે.
	CO4	વિદ્યાર્થીઓ સર્જકોના રેખાચિત્રો વિશે સમજશે.

Course Outcomes Semester –II BA Gujarati		
Subject with code		Course Outcome
PDHYKRUTINO ABHYAS BA2021	CO1	વિદ્યાર્થીઓ અર્વાચીન યુગની કૃતિથી માહિતગાર થાય .
	CO2	કૃષ્ણલાલ શ્રીધરાણીના કાવ્યો વિશે સમજશે અને જાણશે .



	C03	અર્વાચીન પદ્ય વિશે ગાન કરી જ્ઞાનમાર્ગીમય બનશે .
	C04	વિદ્યાર્થીઓ પદ્ય કૃતિ વિશે માહિતગાર થાય.
GDHYKRUTINO ABHYAS BA2022	C01	ગુજરાતી સાહિત્યકારોથી માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ ટૂંકીવાર્તા વિશે સમજશે અને જાણશે .
	C03	ટૂંકીવાર્તાનો આસ્વાદ કરી જ્ઞાનમાર્ગીમય બનશે .
	C04	વિદ્યાર્થીઓ વિવિધ સર્જકોની વાર્તા વિશે સમજશે.
SAHITYA KRUTI NO ABHYAS BA2003	C01	ગુજરાતી સાહિત્ય વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ ટૂંકીવાર્તાઓ વિશે જાણશે .
	C03	ગુજરાતી સર્જક અને તેના સાહિત્ય વિશે જાણશે .
	C04	વિદ્યાર્થીઓ ગુજરાતી સર્જક અને તેના સાહિત્ય વિશે જાણશે .

Course Outcomes Semester –III BA Gujarati		
Subject with code		Course Outcome
GUJARATI SAHITYA SWARUP NO ABHYAS- MADHYAKALIN BA3023	C01	મધ્યકાલીન યુગના સાહિત્યથી માહિતગાર થાય .
	C02	મીરાંબાઈના પદો સમજશે અને જાણશે .
	C03	વિદ્યાર્થીઓ મીરાંના પદોનું ગાન કરી જ્ઞાનમાર્ગીમય બનશે .
	C04	મધ્યકાલીન ભક્તિમય પદો વિશે સમજશે.
GRANTHKAR NO ABHYAS BA3024	C01	ગ્રંથકારના સાહિત્ય વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ સમાજ સુધારક નર્મદ વિશે જાણશે .



	C03	નર્મદના સાહિત્ય સર્જનનો અભ્યાસ કરી ચોક્કસ માહિતી પ્રાપ્ત કરશે .
	C04	વિદ્યાર્થીઓ નર્મદની કવિતાઓનું રસપાન કરી સમજશે.
GUJARATI SAHITYANO ITIHAS- MADHYAKALIN BA3025	C01	મધ્યકાલીન યુગના સાહિત્ય વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ સાહિત્યનો ઉદભવ અને વિકાસ વિશે જાણશે .
	C03	મધ્યકાલીન ગુજરાતી સાહિત્યની રાજકીય સાંસ્કૃતિક, સ્થિતિવિશે જાણશે .
	C04	વિદ્યાર્થીઓ મધ્યકાલીન ગુજરાતી કૃતિને સમજશે.

Course Outcomes Semester –IV BA Gujarati		
Subject with code		Course Outcome
GUJARATI SAHITYA SWARUP NO ABHYAS- MADHYAKALIN BA4023	C01	વિદ્યાર્થીઓ લલિત નિબંધ વિશે માહિતગાર થાય .
	C02	લલિત નિબંધનો આસ્વાદ કરશે .
	C03	ગુજરાતી લલિત નિબંધ અને સર્જકો વિશે જ્ઞાન કેળવશે .
	C04	વિદ્યાર્થીઓ સર્જકોના લલિત નિબંધો વિશે જાણશે.
GRANTHKAR NO ABHYAS BA4024	C01	ગ્રંથકાર પન્નાલાલ વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ પન્નાલાલની કૃતિ વિશે સમજશે અને જાણશે .
	C03	ગ્રંથકારના સાહિત્ય વિશે જ્ઞાન લેશે.
	C04	વિદ્યાર્થીઓ 'વળામણાં' કૃતિનો આસ્વાદ કરશે.
	C01	મધ્યકાલીનયુગનાસાહિત્યથીમાહિતગાર થાય .



GUJARATI SAHITYANO ITIHAS- MADHYAKALIN BA4025	C02	મીરાંબાઈના પદો સમજશે અને જાણશે .
	C03	વિદ્યાર્થીઓ અન્ય કૃતિનો આસ્વાદ કરી જ્ઞાનમાર્ગીમય બનશે
	C04	વિદ્યાર્થીઓ મધ્યકાલીન અન્ય સર્જકોના સાહિત્યને જાણશે.

Course Outcomes Semester –V BA Gujarati		
Subject with code		Course Outcome
GUJARATI SAHITYANO ITIHAS – ARVACHIN-1 BA5021	C01	અર્વાચીનયુગના સાહિત્ય વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ સુધારકયુગ વિશે જાણશે .
	C03	વિદ્યાર્થીઓ ગાંધીયુગ વિશે સમજ કેળવશે .
	C04	અર્વાચીન સાહિત્ય કૃતિઓને જાણશે.
BHASHNA SVRUPNO ABHYAS- 1 BA5022	C01	વિદ્યાર્થીઓ ભાષાના સ્વરૂપ વિશે માહિતગાર થાય .
	C02	ભાષાવિજ્ઞાન વિશે જાણશે.
	C03	વિદ્યાર્થીઓ ભાષાના સ્વરૂપ વિશે સમજ કેળવશે
	C04	ભાષાની ઉચ્ચારણ પ્રક્રિયા વિશે સમજશે.
SAHITYA SIDHANT VICHAR - 1 BA5023	C01	વિદ્યાર્થીઓ સાહિત્ય સિદ્ધાંત વિચાર વિશે માહિતગાર થાય .
	C02	સાહિત્યકલામાં લલિત અને લલિતેતરકલા વિશે જાણશે.
	C03	સાહિત્યના પ્રયોજનના જ્ઞાનની સમજ કેળવશે .
	C04	વિદ્યાર્થીઓ સર્જન-ભાવન વિશે સમજશે.
SAHITYAKRUTINO ABHYAS : PDHYA BA5024	C01	પદ્ય સાહિત્ય સ્વરૂપ વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ સર્જકના જીવન અને કવન વિશે જાણશે.
	C03	' સાત રંગને સરનામે ' કૃતિ જાણી સમજ કેળવશે .



	C04	વિદ્યાર્થીઓ ગીતમાં વિવિધ વર્ણનો વિશે સમજશે.
SAMIXA ANE APATHIT BA5025	C01	ગુજરાતીના વિવિધ સ્વરૂપ સાહિત્ય વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ રુઢિપ્રયોગો વિશે જાણશે .
	C03	કહેવતોના અર્થ અને વાક્યો વિશે સમજ કેળવશે .
	C04	વિદ્યાર્થીઓ ગુજરાતી વ્યાકરણ વિશે જાણે.

Course Outcomes Semester –VI BA Gujarati		
Subject with code		Course Outcome
GUJARATI SAHITYANO ITIHAS – ARVACHIN-2 BA6021	C01	અર્વાચીનયુગના સાહિત્ય વિશે માહિતગાર થાય .
	C02	સુધારકયુગ વિશે જાણશે .
	C03	ગાંધીયુગ વિશે સમજ કેળવશે .
	C04	વિદ્યાર્થીઓ અર્વાચીન કૃતિને સમજશે.
BHASHNA SVRUPNO ABHYAS- 2 BA6022	C01	ભાષાના સ્વરૂપો વિશે માહિતગાર થાય .
	C02	ગુજરાતી બોલીઓ વિશે જાણશે.
	C03	ભાષાના વિકાસ વિશે સમજ કેળવશે.
	C04	વિદ્યાર્થીઓ ગુજરાતી વ્યાકરણ વિશે જાણે.
SAHITYA SIDHANT VICHAR -2 BA6023	C01	વિવેચન સાહિત્ય વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ વિવેચન પદ્ધતિઓ વિશે જાણશે .
	C03	વિવેચન વિશે સમજ કેળવશે .
	C04	વિદ્યાર્થીઓ પાશ્ચાત્ય સાહિત્ય વિશે જાણે.



SAHITYAKRUTINO ABHYAS : GDHYA BA6024	C01	વિદ્યાર્થીઓ ટૂંકીવાર્તાઓના સ્વરૂપ વિશે માહિતગાર થાય .
	C02	ટૂંકીવાર્તાના સર્જકો વિશે જાણશે.
	C03	ટૂંકીવાર્તા વિશે સમજ કેળવશે .
	C04	વિદ્યાર્થીઓ નિયતકૃતિને સમજશે.
VYAVHAR BHASHA BA6025	C01	અરજીલેખન વિશે માહિતગાર થાય .
	C02	વિદ્યાર્થીઓ અહેવાલ વિશે જાણશે.
	C03	વ્યવહાર ભાષા વિશે સમજ કેળવશે .
	C03	વિદ્યાર્થીઓ ગુજરાતી વ્યાકરણને જાણશે.



BA HISTORY

Bachelor Of Arts (History) Program Outcomes (POs)



PO 1	<p>Critical thinking skills:</p> <p>Graduates will be able to analyze complex information, evaluate arguments, and think critically to solve problems.</p>
PO 2	<p>Effective communication:</p> <p>Graduates will demonstrate proficiency in written and oral communication skills, including the ability to express ideas clearly and persuasively.</p>
PO 3	<p>Research skills:</p> <p>Graduates will be able to conduct independent research, gather relevant data, and analyze information to support their arguments.</p>
PO 4	<p>Cultural awareness:</p> <p>Graduates will have a deep understanding of diverse cultures, perspectives, and traditions, fostering empathy and appreciation for cultural differences.</p>
PO 5	<p>Ethical reasoning:</p> <p>Graduates will develop ethical reasoning skills and demonstrate an understanding of ethical issues within their field of study.</p>
PO 6	<p>Creative thinking:</p> <p>Graduates will be able to think creatively, generate innovative ideas, and apply artistic principles to their work.</p>
PO 7	<p>Collaboration and teamwork:</p> <p>Graduates will possess the ability to work effectively in teams, demonstrating leadership skills and contributing to collective goals.</p>
PO 8	<p>Global perspective:</p> <p>Graduates will have an awareness of global issues and their impact, recognizing the interconnectedness of the world.</p>



PO 9	Adaptability and flexibility: Graduates will be able to adapt to changing environments, learn new skills, and embrace lifelong learning.
PO 10	Problem-solving skills: Graduates will be equipped with the skills to identify problems, propose solutions, and make informed decisions.



**Bachelor Of Arts (History)
Program Specific Outcomes
(PSOs)**



PSO1	<ul style="list-style-type: none">• Literary Knowledge: Demonstrate a comprehensive understanding of major literary periods, movements, genres, and canonical works in English literature.
PSO 2	<ul style="list-style-type: none">• Multicultural Perspectives: Explore and appreciate the diversity of voices and perspectives in literature, including works by authors from different cultural, ethnic, and geographic backgrounds.

Bachelor Of Arts (History)

Course Outcomes (COs)

Course Outcomes Semester-I BA HISTORY		
Subject with code		Course Outcome
HISTORY OF ANCIENT INDIA BA1031	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about Vedic culture in India
	CO4	Students can Such a problem and solution
HISTORY OF MODERN WORLD BA1032	CO1	Students learned about the world history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about Revolution
	CO4	Students can Such a problem and solution
INDIAN CONSTITUTION BA1004	CO1	Students learned about the pre history of Indian constitution
	CO2	To be Evaluate the factors affecting behavior
		To Understand about constitution in India
	CO3	Students can Such a problem and solution



Course Outcomes Semester –II BA HISTORY		
Subject with code		Course Outcome
ANCIENT INDIA: HISTORY, ARCHEAOLGY, AND CULTURE (5th Century B.C to 650 A. D.) BA2031	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about pre history culture in India
	CO4	Students can Such a problem and solution
ADHUNIK VISHVA NO ITIHAS FRANCE NI KRANTITHI RASTRASANG SUDHI BA2032	CO1	Students learned about the world history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about Revolution
	CO4	Students can Such a problem and solution



Course Outcomes Semester –III BA HISTORY		
Subject with code		Course Outcome
History of India (1818 to1885) BA3033	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture in India
	CO4	Students can Such a problem and solution
History of Europe (1789 .A.D to1890 A.D BA3034	CO1	Students learned about the pre history Of Europe
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture of Europe
	CO4	Students can Such a problem and solution
HISTORY OF INDIA (MUGHAL AGE) BA3035	CO1	Students learned about the pre history of mugal age
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about mugal culture in India
	CO4	Students can Such a problem and solution



Course Outcomes Semester –IV B. A HISTORY		
Subject with code		Course Outcome
HISTORY OF INDIA (1885-1964) BA4033	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture in India
	CO4	Students can Such a problem and solution
HISTORY OF EUROPE (1890-1960) BA4034	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about Vedic culture in europ
	CO4	Students can Such a problem and solution
HISTORY OF INDIA (MARATHA AGE) BA4035	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about Maratha in India
	CO4	Students can Such a problem and solution
CULTURAL HERITAGE OF GUJARAT BA4004	CO1	Students learned about the history of Gujarat
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture in Gujarat
	CO4	Students learned about the history of Gujarat



Course Outcomes Semester –V B. A HISTORY		
Subject with code		Course Outcome
ELEMENT OF HISTORICAL METHOD-1 BA5031	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
HISTORY OF INDIA (1206 TO 1414) BA5032	CO1	Students learned about the history of Gujarat
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture in Gujarat
	CO4	Students can Such a problem and solution
HISTORY OF GUJARAT 470 TO 942) BA5033	CO1	Students learned about the history of Gujarat
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture in Gujarat
	CO4	Students can Such a problem and solution
CULTURAL HISTORY OF INDIAI -1 BA5034	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about Vedic culture in India
	CO4	Students can Such a problem and solution
THE CONSTITUTION HISTORY OF THE REPUBLIC INDIA-1 BA5035	CO1	Students learned about the pre history of Indian constitution
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about constitution in India
	CO4	Students can Such a problem and solution



Practical - HUMAN RIGHT BA5004	CO1	Students learned about the pre history of Indian constitution
	CO2	To Understand about constitution in India & human right
	CO3	Students can Such a problem and solution

Course Outcomes Semester –VI B. A HISTORY		
Subject with code		Course Outcome
ELEMENT OF HISTORICAL METHOD-2 BA6031	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
HISTORY OF INDIA (1414 TO 1757) BA6032	CO1	Students learned about the medieval history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about medieval culture in India
	CO4	Students can Such a problem and solution
HISTORY OF GUJARAT 942 TO 1390) BA6033	CO1	Students learned about the history of Gujarat
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about culture in Gujarat
	CO4	Students can Such a problem and solution
CULTURAL HISTORY OF INDAI -2 BA6034	CO1	Students learned about the pre history
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about hindu and muslim culture in



		India
	CO4	Students can Such a problem and solution
THE CONSTITUTION HISTORY OF THE REPUBLIC INDIA-2 BA6035	CO1	Students learned about the pre history of Indian constitution
	CO2	To be Evaluate the factors affecting behavior
	CO3	To Understand about constitution in India
	CO4	Students can Such a problem and solution



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M.A. ECONOMICS

MASTER OF ARTS (ECONOMICS)

Program Outcomes (POs)



-
- **PO1: Critical Thinking and Problem Solving** - Apply the perspective of their chosen specialized area of study to develop fully-reasoned opinions on contemporary issues.
 - **PO2: Research Skill** - Ability to interpret and apply research literature to investigate complex problems using research methodologies, techniques and tools.
 - **PO3: Lifelong Learning** - An ability to engage in life-long learning to improve professional competency.
 - **PO4: Usage of Modern Tools** - An ability to use appropriate techniques, skills, and modern tools necessary for practice in the respective field.
 - **PO5: Teamwork** - Able to determine the effectiveness with which goals are defined and achieved in team environments to assess the contributions made by themselves as well as by their peers within those environments and to identify and resolve conflicts.
 - **PO6: Leadership Skills** - Able to document their participation and contribution to GOs, NGOs or consulting projects, internship opportunities or other initiatives.
 - **PO7: Environment and Sustainability** - Understand the professional skills in managing societal and environmental issues and demonstrate the knowledge of and need for sustainable development.
 - **PO8: Ethics** - Apply ethical principles and commit to professional ethics and responsibilities and norms of practice.
 - **PO9: Entrepreneurial Perspective** - Able to identify, assess and shape entrepreneurial opportunities and to evaluate their potential for initiating start-ups.
 - **PO10: Global Perspective** - Able to demonstrate their ability to assess and evaluate the dynamic internal and external elements of the competitive global environment.



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Master Of Arts (Economics) Program Specific Outcomes (PSOs)



PSO1	<ul style="list-style-type: none">• Understand the real economic problems. <p>Apply their knowledge practically to understand the real economic problems. Develop own thinking regarding current national, international policies and issues.</p>
PSO 2	<ul style="list-style-type: none">• Develop comprehensive professional skills <p>Develop comprehensive professional skills that are required for post graduates in Economics. Empower them to communicate with a focus on specific economic issues.</p>



Master Of Arts (Economics)

Course Outcomes (COs)



Course	Course Outcome	
Micro Economics FAHM115401	CO1	Measure how changes in price and income affect the behavior of buyers and sellers
	CO2	Economic Thinking: Prepare for success in studying economics
	CO3	Choice in a World of Scarcity: Use economic thinking to explain choice in a world of scarcity, Analyze how buyers and sellers interact in a free and competitive market
	CO4	Analyze the behavior of consumers in terms of the demand for products, Analyze the performance of firms under different market structures,
Macro Economics FAHM115402	CO1	Be able to explain the concept of monetary policy and list its instruments
	CO2	Economic Thinking: Prepare for success in studying economics Analyze how buyers and sellers interact in a free and competitive market
	CO3	Choice in a World of Scarcity: Use economic thinking to explain choice in a world of scarcity.
	CO4	Measure how changes in price and income affect the behavior of buyers and sellers
Economics of Banking & Financial Service FAHM115403	CO1	Be able to explain the concept of Banking policy and list its instruments
	CO2	Be able to relate statistics and mathematics with economics to understand various economics policies
	CO3	Be able to use different statistical tools in research work
	CO4	supply and demand analysis to analyze the impact of economic events on Markets.
Theory and Practice of Co- operation FAHM115404	CO1	Be able to relate Cooperation with economics to understand various Cooperation policies
	CO2	Be able to use different Social System tools in research work



	CO3	Students can get thorough knowledge of finance and commerce
	CO4	Students can independently start up their own business.

Agricultural Economics FAHM115405	CO1	Explore the various facets of rural marketing and develop an insight into rural and agricultural marketing regarding different concepts and basic practices in this area
	CO2	Identify the challenges and opportunities in the field of rural and agricultural marketing
	CO3	To acquaint the students with the appropriate concepts and techniques in the area of rural and agricultural marketing –like distribution channels, regulated markets etc
	CO3	Agricultural and natural resource-based firm production management

Course Outcome (CO) for M.A. (Economics) Sem- II

Course	Course Outcome	
Micro Economics -1 FAHM125401	CO1	Be able to compare the different market structures and relate them to the real-life situations
	CO2	Be able to describe and restate the ideas of various welfare economists
	CO3	Be able to summarize the theories of wages, rent, interest and profit
	CO4	Recognize market failure and the role of government in dealing with those failures, Explain how input markets work,
Macro- Economics (2) FAHM125402	CO1	Be able to critically examine the theories of value of money and business cycles
	CO2	Be able to list the effects of inflation
	CO3	Be able to explain the tools of monetary policy
	CO4	Be able to develop banking habits in real life
Basic Statistics for Economics. FAHM125403	CO1	Be able to relate statistics and mathematics with economics to understand various economics policies
	CO2	Be able to use different statistical tools in research work
	CO3	Be able to interpret research findings and draw appropriate conclusions
	CO4	Understand the have the basic knowledge on data collection and



		various statistical elementary tools.
Theory and Practice of Co-operation (1) FAHM125404	CO1	Be able to relate Cooperation with economics to understand various Cooperation policies
	CO2	Be able to use different Social System tools in research work
	CO3	Be able to analyze the theories of international trade
	CO4	Be able to differentiate between tariff and non-tariff barriers in international trade

Industrial Economics FAHM125405	CO1	Be able to list the problems of the industries and suggest measures to solve the problems
	CO2	Be able to illustrate the industrial models and learn the application part
	CO3	Develop an understanding about the different types of organizational structures and use the same for business purpose
	CO4	Explain and analyses the main issues and debates in the field of industrial economics

Course Outcome (CO) for M.A. (Economics) III-Sem

Course	Course Outcome	
PUBLIC FINANCE- I FAHM135401	CO1	Be able to describe budget process
	CO2	Be able to list the benefits of foreign direct investment
	CO3	Be able to differentiate between Intra and International trade and state its importance in the economic development of a country
	CO4	To create an understanding of the types of organizational structures
International Economics – 1 FAHM135402	CO1	Be able to compare different international trade blocks
	CO2	Be able to describe the concepts of foreign exchange rate, balance of payment and devaluation of currency
	CO3	Be able to analyses the working of international relation
	CO4	Be familiar with the main economic theories and models of international trade.
Theory and	CO1	Be able to critically examine the views of different Growth Model



Issues of Growth and Development FAHM135403	CO2	Be able to summarize the ideas of various Indian as well as Development thinkers
	CO3	Develop an understanding about the different types of organizational structures and use the same for business purpose
	CO4	Through the optimum allocation of resources, inequality within the economic and social structures also reduces.
Economy of Gujarat FAHM135404	CO1	Be able to identify the problems of the small and large scale Industries in Gujarat
	CO2	Be able to describe the working of different industrial finance Institutions in Gujarat
	CO3	Be able to critically examine and summarize the theories of industrial location in Gujarat
	CO4	Price stability. High and sustainable economic growth.
Research Methodology FAHM135405	CO1	Be able to define research methodology
	CO2	Apply data collection methods and sampling methods to research study
	CO3	Develop the skills of using SPSS software for data processing
	CO4	Provide students with knowledge, general competence, and analytical skills in Research Methodology and Research & Publication Ethics.

Course Outcome (CO) for M.A. (Economics) IV-sem

Course	Course Outcome	
Public Finance-II FAHM145401	CO1	Be able to describe budget process
	CO2	Be able to list the benefits of foreign direct - indirect Tax & investment
	CO3	Be able to differentiate between Intra and International trade and state its importance in the economic development of a country
	CO4	To create an understanding of the types of organizational structures
International	CO1	Be able to compare different international trade Market



Economics – 2 FAHM145402	CO2	Be able to describe the concepts of foreign exchange rate, balance of payment and devaluation of currency
	CO3	Be able to analyses the working of international relation, WTO
	CO4	Be familiar with the main economic theories and models of international trade.
Planning and Development Policies FAHM145403	CO1	Be able to summarize the Lewis model
	CO2	Be able to critically examine the Fei Ranis contribution in the agricultural sector
	CO3	Be able to point out the problems and reasons of agricultural backwardness in Madhya Pradesh as well as India as a whole
	CO4	Use outcome indicators to set measurable objectives and to measure whether we have reached it.
Major Environmental Issues FAHM145404	CO1	Be able to understand and list the reasons behind chronic underdevelopment in a country like India
	CO2	Be able to distinguish between the term's growth Development & Environment
	CO3	Be able to compare the theories of development and various Pollution
	CO4	Conservation of Critical Environmental Resources

Demography FAHM145405	CO1	Be able to analyse and relate the theories of population with the real world
	CO2	Be able to critically examine the Fei Ranis contribution in the agricultural sector
	CO3	Be able to point out the problems and reasons of agricultural backwardness in Madhya Pradesh as well as India as a whole
	CO4	Understand the core social demographic variables, and how these variables influence population growth, composition, and structure



M.A. ENGLISH

Masters of Arts (ENGLISH) Program Outcomes (POs)



M. A. ENGLISH

- PO1:
Advanced Literary Analysis: Students should demonstrate a deep understanding of literary theory and be able to apply advanced analytical techniques to a variety of literary texts.
- PO2:
Research Proficiency: Students should be proficient in conducting independent research, including the ability to formulate research questions, design a research project, and use appropriate research methods.
- PO3:
Critical Thinking: Students should develop strong critical thinking skills, enabling them to evaluate and interpret complex literary texts, theories, and cultural contexts.
- PO4:
Literary and Cultural Context Awareness: Students should gain an understanding of the historical, cultural, and social contexts that shape literary works. This includes an awareness of diverse perspectives and voices within literature.
- PO5:
Specialization Knowledge: Depending on the program, students might develop expertise in a specific literary period, genre, author, or cultural aspect. This specialization demonstrates a focused understanding of a particular area within English literature.
- PO6:
Global Perspectives: An awareness of global literary traditions and the ability to analyze and appreciate literature from different cultural and linguistic backgrounds.
- PO7:
Interdisciplinary Connections: The ability to make connections between literature and other disciplines, such as history, sociology, philosophy, or gender studies, fostering a broader understanding of the cultural and intellectual landscape.
- PO8:
Cultural Competency: Students should demonstrate cultural sensitivity and an understanding of diverse perspectives, acknowledging and respecting different cultural



norms and values reflected in literature.

- PO9:

Effective Communication: Graduates should be able to communicate their ideas effectively in both written and oral forms. This includes the ability to write scholarly essays, research papers, and other academic documents, as well as articulate ideas in discussions and presentations.



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Masters of Arts (ENGLISH) Course Outcomes (COs)



Course Outcomes Semester –I MA English

Subject with code		Course Outcomes
Literature in English Language (1450-1660): Poetry FAHM115101	CO1	Students will be able to identify and describe key poets and poetic movements of the English Renaissance period.
	CO2	Students will be able to analyze and interpret poems from this period, using close reading skills to identify literary devices, themes and other elements of the text.
	CO3	Students will be able to articulate their ideas about poetry clearly and persuasively, both orally and in writing.
	CO4	Students will be able to conduct research on literary texts and historical contexts, using appropriate research methods and citation practices.
Literature in English Language (1450-1660) Prose and Plays FAHM115102	CO1	Students will be exposed to different forms of writing, prose and plays that will help them develop their reading and critical thinking abilities.
	CO2	Students will be able to explore the literary themes and motifs present in the works of renowned writers from the 15 th to the mid-17 th century.
	CO3	Students will be able to gain a deeper appreciation of the different literary genres such as tragedy, comedy, satire and romance.
	CO4	Through critical reading, analytical writing, and class discussion, students will develop analytical skills that will enable them to analyze and interpret literary works with a more profound understanding.
Classical and Renaissance Literary Criticism	CO1	A comprehensive understanding of the core tenets of classical and Renaissance literary criticism.
	CO2	Identification of key historical and intellectual transitions in the development of literary criticism.



FAHM115103	CO3	Insights into the continued relevance and influence of classical and Renaissance literary criticism in modern literary analysis and interpretation.
	CO4	Students will be able to compare and contrast the key features and concepts in classical and Renaissance literary criticism.
Indian Writing in English	CO1	A comprehensive overview of the origins and development of Indian Writing in English as a literary phenomenon.
FAHM115104	CO2	A deeper understanding of the thematic and stylistic diversity in Indian Writing in English, reflecting the rich tapestry of Indian culture and society.
	CO3	Students will be able to examine Indian literature in the context of post-colonial theory, considering how authors respond to and engage with the legacy of colonialism.
	CO4	Students will be able to understand the historical, social, and political contexts that shape the themes and narratives in Indian Writing in English.
Literature by Indian Diaspora	CO1	A nuanced understanding of the literary works produced by the Indian diaspora, emphasizing their role in articulating the diasporic experience.
FAHM115105	CO2	Students will be able to investigate the role of language and cultural memory in diasporic literature, considering how writers grapple with the preservation of cultural heritage.
	CO3	Students will be able to understand the historical, social, and political contexts that shape the themes and narratives in literature by the Indian diaspora.
	CO4	Students will be able to articulate critical insights verbally, engaging in discussions and presentations on literature by the Indian diaspora.

Course Outcomes Semester –II MA English		
Subject with code		Course Outcomes
Literature in English Language (1660-1798)	CO1	A better understanding of the evolution of literature in English language during the period between 1660 and 1798.
	CO2	Increased knowledge of the significant literary movements and trends that characterized this period, including the Restoration, the Enlightenment and the Romantic Era.
FAHM125101		



	CO3	Enhanced appreciation of the works of prominent writers from this period, such as Alexander Pope, John Dryden, Congreve, Thomas Gray etc.
	CO4	Students will be able to develop research skills to explore primary and secondary sources related to literature in English from 1660 to 1798, and enhance writing skills to articulate critical analyses.
Literature in English Language (1760-1830)	CO1	A comprehensive understanding of the major literary movements and trends in English literature during the period of 1760-1830.
FAHM125102	CO2	A clear understanding of the themes and styles that emerged during the period of 1760-1830.
	CO3	The ability to critically analyze and interpret a range of literary texts from the period of 1760-1830.
	CO4	The ability to present a well-structured and coherent argument about the literature of the period, supported by logical debates.
Neo Classical, Romantic and Victorian Literary Criticism	CO1	Developed understanding of the Neo-Classical, Romantic, and Victorian literary movements, including their historical, social, and cultural contexts.
FAHM125103	CO2	Students will be able to examine literary criticism within the broader cultural, political, and intellectual contexts of the Neo-Classical, Romantic, and Victorian eras.
	CO3	Developed critical thinking skills through the evaluation and interpretation of literary texts and criticism from the Neo-Classical, Romantic, and Victorian periods.
	CO4	Students will be able to discuss the contemporary relevance of Neo-Classical, Romantic, and Victorian literary criticism, considering how these theories continue to influence literary analysis today.
English-Language Theory	CO1	A comprehensive overview of the historical development and interdisciplinary nature of English-Language Theory.
FAHM125104	CO2	Enhanced understanding of the various theoretical frameworks and methods used in English-Language Theory, with insights into their practical applications.
	CO3	Insights into the enduring importance of English-Language Theory in shaping critical perspectives on language,



		literature, and cultural studies, as well as its role in fostering interdisciplinary dialogue and analysis.
	CO4	Students will be able to engage with contemporary debates and discussions within English-language theory, considering emerging trends and challenges.
Noble and Booker Prize Winning Texts FAHM125105	CO1	A comprehensive understanding of the key features and themes found in works honoured with the Nobel Prize in Literature and the Booker Prize.
	CO2	Developed critical thinking skills through the evaluation and interpretation of award-winning texts, considering both literary and cultural significance.
	CO3	Students will be able to investigate how Nobel and Booker Prize-winning texts are received by the public, critics, and scholars, considering the impact of these awards on literary reputation.
	CO4	Students will be able to discuss the contemporary relevance of Nobel and Booker Prize-winning texts, considering how these works continue to resonate with readers today.

Course Outcomes Semester –III MA English		
Subject with code		Course Outcomes
Literature in English Language (1830 - 1914) FAHM135101	CO1	An understanding of the socio-cultural, political, and historical contexts of literary texts.
	CO2	Enhanced critical thinking and analytical skills through close readings of diverse texts.
	CO3	Students will be able to connect literary works to broader cultural and intellectual trends of the 19th and early 20th centuries.
	CO4	Developed written and oral communication skills in discussing and interpreting literature.
Literature in English Language (1900 - 1950) FAHM135102	CO1	Developed knowledge of the various major literary movements and styles of the time.
	CO2	Deep awareness of the themes and motifs that characterized the literature of this time.
	CO3	Developed critical thinking skills and the ability to engage with complex literary texts.



	CO4	Improved research skills for conducting in depth analysis about the studied authors and the works.
Contemporary Literary Criticism FAHM135103	CO1	Students will be able to explore how contemporary literary criticism engages with diverse voices, perspectives, and global literary traditions, reflecting the multicultural nature of contemporary literature.
	CO2	Students will be able to understand the interdisciplinary nature of contemporary literary criticism, examining its intersections with fields such as cultural studies, sociology, philosophy, and media studies.
	CO3	Students will be able to investigate how literary criticism responds to issues of globalization, migration, and cultural exchange, exploring the interconnectedness of literature in a global context.
	CO4	Enhanced research skills to explore primary and secondary sources related to contemporary literary criticism and stay abreast of current critical conversations.
Special Author (1): Translation: A Case Study of Tagore FAHM135104	CO1	Increased understanding of the cultural and literary significance of Tagore's work.
	CO2	Enhanced knowledge of the challenges and complexities of translation, particularly, with regard to works of literature.
	CO3	Development of critical thinking skills through analysis and interpretation of Tagore's works in translation.
	CO4	Enhanced research skills through the analysis of primary and secondary sources related to Tagore's works.
Research Methodology FAHM135105	CO1	Students will gain proficiency in selecting appropriate research designs (e.g., experimental, observational, qualitative, quantitative) based on the research questions and objectives.
	CO2	Developed ability to conduct a comprehensive literature review, identifying existing research relevant to the chosen topic and recognizing gaps in current knowledge.
	CO3	Enhanced ability to critically evaluate existing research,



		assessing its quality, validity, and relevance to inform future research directions.
	CO4	Students will be able to explore the use of technology in research, including data collection tools, statistical software, and online databases.

Course Outcomes Semester –IV MA English		
Subject with code		Course Outcomes
Literature in English Language (1950 to the Present) FAHM145101	CO1	Developed skills in close reading and critical analysis of literary texts.
	CO2	Improved critical analysis skills for literary works of the period.
	CO3	Appreciation for the global significance of English literature in this period.
	CO4	Students will be able to undertake independent research projects that contribute to a deeper understanding of specific literary topics.
Special Authors (2): T.S. Eliot & W. S. Maugham FAHM145102	CO1	Enhanced knowledge of the works and lives of Eliot and Maugham.
	CO2	Increased understanding of cultural and literary significance of their works within the modernist movement.
	CO3	Enhanced research skills through analysis and interpretation of Eliot’s and Maugham’s writing.
	CO4	Improved writing skills through the writing of a scholarly paper on the topic related to studied works and authors.
Indian Poetics FAHM145103	CO1	Deepened understanding of the rich tapestry of Indian poetic traditions.
	CO2	Enhanced appreciation for the cultural and linguistic nuances inherent in Indian poetry.
	CO3	Facilitation of cross-cultural dialogue by illuminating the significance of Indian poetics in the global literary context.



	CO4	Students will be able to develop research skills to investigate specific themes, poets, or periods within Indian poetics.
Indian Texts in Translation FAHM145104	CO1	Enhanced knowledge of the cultural and linguistic complexities of Indian literature and translation.
	CO2	Increased awareness of the challenges and possibilities of translating Indian texts into other language.
	CO3	Development of research skills through the analysis of primary and secondary sources related to the studied works and authors.
	CO4	Improved writing skills through the writing of a scholarly paper on the topic related to the studied works and authors.
Philosophy and Literature FAHM145105	CO1	Enhanced appreciation of the interplay between philosophy and literature, shedding light on how literary works can serve as vehicles for philosophical discourse.
	CO2	A deeper comprehension of how literary devices, such as allegory and metaphor, contribute to the expression of philosophical thought in literature.
	CO3	A framework for future interdisciplinary research and discussions on the intersection of philosophy and literature, encouraging scholars to explore this dynamic relationship further.
	CO4	Students will be able to conduct comparative analyses of different literary works or genres to explore variations in the presentation of philosophical ideas.



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MA GUJARATI

MASTER OF ARTS (GUJARTI)

Program Outcomes (PO)



PO1: To provide a higher level of exposure to PG Students in the domain of literature, criticism and theory and language studies.

- સાહિત્ય, વિવેચન અને સિદ્ધાંત અને ભાષા અભ્યાસના ક્ષેત્રમાં પીજી વિદ્યાર્થીઓને ઉચ્ચ સ્તરનું એક્સપોઝર પ્રદાન કરવું.

PO2: To develop an aptitude for research in students for their possible further study for a research degree like M.Phil./Ph.D.

- M.Phil./Ph.D જેવી સંશોધન ડિગ્રી માટે વિદ્યાર્થીઓમાં તેમના સંભવિત વધુ અભ્યાસ માટે સંશોધન માટે યોગ્યતા વિકસાવવા.

PO3: To inspire and mentor students to develop varied skills through extracurricular activities like sports, cultural activities and social service for the eventual nation building.

- રાષ્ટ્ર નિર્માણ માટે રમતગમત, સાંસ્કૃતિક પ્રવૃત્તિઓ અને સામાજિક સેવા જેવી અભ્યાસેતર પ્રવૃત્તિઓ દ્વારા વિવિધ કૌશલ્યો વિકસાવવા વિદ્યાર્થીઓને પ્રેરણા અને માર્ગદર્શન આપવું.

PO4: To make the students acquire employable skills in the areas of Gujarati Proof Reading, Mass Media & Copy editing, if they are good Speakers, they can work on different Radio Channels. The students get familiarized with interdisciplinary studies like Literature and Film, Literature and History, Literature and Psychology etc.



- વિદ્યાર્થીઓને ગુજરાતી પૂઠ્ઠ રીડિંગ, માસ મીડિયા અને કોપી એડિટિંગના ક્ષેત્રોમાં રોજગાર યોગ્ય કૌશલ્ય પ્રાપ્ત કરવા માટે, જો તેઓ સારા વક્તા હોય, તો તેઓ વિવિધ રેડિયો ચેનલો પર કામ કરી શકે છે. વિદ્યાર્થીઓ સાહિત્ય અને ફિલ્મ, સાહિત્ય અને ઇતિહાસ, સાહિત્ય અને મનોવિજ્ઞાન વગેરે જેવા આંતરશાખાકીય અભ્યાસોથી પરિચિત થાય છે.



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MASTER OF ARTS (GUJARTI)

Program Specific Outcomes (PSO)



PSO1: To train the students into the critical reading and analysis of the works in Gujarati. So that they can take careers in teaching Gujarati Language and literature, Media-communication, proof reading, script writing.

વિદ્યાર્થીઓને ગુજરાતીમાં કૃતિઓના વિવેચનાત્મક વાંચન અને વિશ્લેષણની તાલીમ આપવી. જેથી તેઓ ગુજરાતી ભાષા અને સાહિત્ય, મીડિયા-કોમ્યુનિકેશન, પૂક રીડિંગ, સ્ક્રિપ્ટ રાઈટિંગ શીખવવામાં કારકિર્દી બનાવી શકે.

PSO2: To develop and refine the students' communicative skills in Gujarati. The students not only enrich their command over language through interdisciplinary studies but also gain in-depth knowledge of their disciplines.

ગુજરાતીમાં વિદ્યાર્થીઓની સંચાર કૌશલ્ય વિકસાવવા અને સુધારવી. વિદ્યાર્થીઓ આંતરશાખાકીય અધ્યયન દ્વારા ભાષા પરના તેમના કમાન્ડને માત્ર સમૃદ્ધ બનાવતા નથી પરંતુ તેમની વિદ્યાશાખાઓનું ઊંડાણપૂર્વકનું જ્ઞાન પણ મેળવે છે.

PSO3: To train the students for academic jobs related to teaching and research at various levels, the language oriented jobs in Mass Media, and competitive examinations like GPSC, UPSC, NET, SLET and others.

વિદ્યાર્થીઓને વિવિધ સ્તરે શિક્ષણ અને સંશોધન સંબંધિત શૈક્ષણિક નોકરીઓ, માસ મીડિયામાં ભાષાલક્ષી નોકરીઓ અને GPSC, UPSC, NET, SLET અને અન્ય જેવી સ્પર્ધાત્મક પરીક્ષાઓ માટે તાલીમ આપવી.



**GOKUL
GLOBAL
UNIVERSITY**

Approved By Govt. of Gujarat
(Recognized by UGC under Section 22 & 21) of 1956)
(Gujarat Private State University Act 4 of 2018)

MASTER OF ARTS (GUJARTI)

Course Outcomes (CO)



Course Outcomes Semester-I M.A. Gujarati		
Subject with code		Course Outcome
પ્રશિષ્ટકૃતિઓનો અભ્યાસ FAHM115201	CO1	વિદ્યાર્થીઓ પ્રશિષ્ટ કૃતિથી માહિતગાર થાય .
	CO2	ભારતીય સાહિત્ય વિશે સમજશે અને જાણશે .
	CO3	વિદ્યાર્થીઓ સાહિત્યિક દૃષ્ટિકોણ અને સમજ વિકસાવવા માટે સક્ષમ થશે છે.
	CO4	મધ્યકાલીન અને અર્વાચીન કૃતિ વિશે જાણે.
સાહિત્યસ્વરૂપનો અભ્યાસ : નાટક FAHM115202	CO1	વિદ્યાર્થીઓ સાહિત્ય સ્વરૂપો વિશે માહિતગાર થાય .
	CO2	સાહિત્ય કૃતિ ' અંગૂલિમાલા ' વિશે સમજશે અને જાણશે .
	CO3	સાહિત્ય સ્વરૂપ નાટકનો ઉદ્ભવ અને વિકાસ પરિચય મેળવી માહિતગાર બનશે .
	CO4	વિદ્યાર્થીઓ નાટ્યસર્જકોના સાહિત્ય વિશે જાણશે.
સાહિત્ય અને આધુનિકતા FAHM115203	CO1	વિદ્યાર્થીઓ સાહિત્યમાં આધુનિકતાવાદથી માહિતગાર થાય .
	CO2	આધુનિકતા વિશે સમજશે અને જાણશે.
	CO3	આધુનિકતા વિશે સમજ વિકસાવવા માટે સક્ષમ થશે છે .
	CO4	વિદ્યાર્થીઓ આધુનિક વાર્તાઓ વિશે જાણે.
લોકવિદ્યા અને લોકસાહિત્ય FAHM115204	CO1	વિદ્યાર્થીઓ લોકસાહિત્યથી માહિતગાર થાય .
	CO2	લોકવિદ્યા વિશે સમજશે અને જાણશે.



	CO3	વિદ્યાર્થીઓ લોકસાહિત્ય વિશેની સમજ વિકસાવવા માટે સક્ષમ થશે છે .
	CO4	કથાગીતોથી માહિતગાર થાય.
સાહિત્ય અને સિનેમા FAHM115205	CO1	સાહિત્ય અને સિનેમાના આંતરસંબંધોથી માહિતગાર થાય .
	CO2	સાહિત્ય અને સિનેમાની વિભાવના વિશે સમજશે અને જાણશે .
	CO3	સાહિત્યકૃતિ આધારિત ફિલ્મ વિશેની સમજ વિકસાવવા માટે સક્ષમ થશે છે .
	CO4	ફિલ્મ અને સાહિત્ય વચ્ચેના ભેદ જાણે.

Course Outcomes Semester –II M.A. Gujarati

Subject with code		Course Outcome
ગ્રંથકારનો અભ્યાસ- મધ્યકાલીન FAHM125201	CO1	ગુજરાતી મધ્યકાલીન કૃતિથી માહિતગાર થાય .
	CO2	મધ્યકાલીન સર્જક દયારામ વિશે સમજશે અને જાણશે
	CO3	વિદ્યાર્થીઓ દયારામના સાહિત્ય સર્જનથી અભિભૂત બનશે .
	CO4	કૃષ્ણભાવના પદો વિશે જાણે.
ભારતીય સાહિત્ય મીમાંસા FAHM125202	CO1	ભારતીય મીમાંસાથી માહિતગાર થાય .
	CO2	વિદ્યાર્થીઓ ભારતીય કાવ્યશાસ્ત્રો વિશે સમજશે અને જાણશે .
	CO3	વિદ્યાર્થીઓ રસસિદ્ધાંત વિશે માહિતગાર બનશે .
	CO4	વક્રોક્તિ અને રમણીયતાનો સિદ્ધાંત વિશે જાણે.
ભારતીય સાહિત્ય	CO1	વિદ્યાર્થીઓ ભારતીય કૃતિથી માહિતગાર થાય .



FAHM125203	CO2	ભારતીયતા અને કૃતિ અભ્યાસ વિશે સમજશે અને જાણશે .
	CO3	વિદ્યાર્થીઓ કૃતિ અભ્યાસ કરી જ્ઞાની બનશે .
	CO4	નિયત વિશે જાણે સમિક્ષાત્મક અભ્યાસ કરે.
લોકસાહિત્યનું સ્વરૂપ અને પ્રકાર FAHM125204	CO1	વિદ્યાર્થીઓ લોકસાહિત્યથી માહિતગાર થાય .
	CO2	લોકકથા વિશે સમજશે અને જાણશે .
	CO3	લોકસાહિત્ય અને તેની વિભાવથી રસભર બનશે
	CO4	લોકકથાનો પરિચયાત્મક ખ્યાલ કેળવશે.
સાહિત્ય અને સમાજશાસ્ત્ર FAHM125206	CO1	વિદ્યાર્થીઓ સમાજશાસ્ત્રની પરિભાષાથી માહિતગાર થાય.
	CO2	'સાપના ભારા' કૃતિ વિશે સમજશે અને જાણશે .
	CO3	વિદ્યાર્થીઓ સાહિત્ય અને સમાજશાસ્ત્ર વિશે જાણી જ્ઞાની બનશે .
	CO4	સાહિત્ય અને કૃતિમાં સમાજદર્શન વિશે જાણે.

Course Outcomes Semester –III M.A. Gujarati

Subject with code		Course Outcome
ગ્રંથકારનો અભ્યાસ રાવજી પટેલ) અર્વાચીન(FAHM135201	CO1	વિદ્યાર્થીઓ સાહિત્ય કૃતિથી માહિતગાર થાય .
	CO2	રાવજી પટેલની સાહિત્યકૃતિ વિશે સમજશે અને જાણશે .
	CO3	વિદ્યાર્થીઓ સર્જક અને સાહિત્યનો અભ્યાસ કરી જ્ઞાની બનશે .
	CO4	'અશ્રુધર', 'ઝંઝા' નવલકથા વિશે જાણે.
પાશ્ચાત્ય સાહિત્યમીમાંસા FAHM135202	CO1	વિદ્યાર્થીઓ પાશ્ચાત્ય સાહિત્યમીમાંસા માહિતગાર થાય .
	CO2	પાશ્ચાત્ય સાહિત્યમીમાંસાના કાવ્ય વિચારો વિશે સમજશે અને



		જાણશે .
	CO3	સાહિત્ય અને જીવનનો સંબંધની સમજણ મેળવે.
	CO4	વિદ્યાર્થીઓ કવિતા વિચાર વિશે જાણી અભિભૂત બનશે .
ભાષાવિજ્ઞાન અને ભાષાનું સ્વરૂપ FAHM135203	CO1	વિદ્યાર્થીઓ ભાષાવિજ્ઞાનથી માહિતગાર થાય .
	CO2	ભાષાવિજ્ઞાન અને ભાષાનું સ્વરૂપ વિશે સમજશે અને જાણશે.
	CO3	ગુજરાતી ભાષાની ઉચ્ચારણ પ્રક્રિયા વિશે જાણે.
	CO4	વિદ્યાર્થીઓ ભાષાનું સ્વરૂપ અને કાર્યક્ષેત્ર વિશે જાણશે .
તુલનાત્મક સાહિત્ય FAHM135204	CO1	વિદ્યાર્થીઓ તુલનાત્મક સાહિત્ય માહિતગાર થાય .
	CO2	ભારતીય અને વિશ્વ સાહિત્યની તુલનાત્મક સાહિત્ય સમજશે અને જાણશે .
	CO3	માનવીની ભવાઈ' અને પર્લ બક કૃત 'ગુડ અર્થ'ની પ્રાદેશિકતા જાણે.
	CO4	વિદ્યાર્થીઓ તુલનાત્મક સાહિત્ય સંજ્ઞા અને સ્વરૂપ વિશે જ્ઞાન પ્રાપ્ત કરશે .
લોકસાહિત્યનું સંશોધન, સંપાદન અને ગતિવિધિ FAHM135205	CO1	વિદ્યાર્થીઓ લોકસાહિત્યનું સંશોધન માહિતગાર થાય.
	CO2	લોકસાહિત્યના સંશોધન સંપાદનની સમસ્યાઓવિશે સમજશે અને જાણશે .
	CO3	ગુજરાતી લોકકથા ના સંશોધન અને સંપાદન ની ગતિવિધિ વિશે જાણે.



	CO4	લોકસાહિત્યના સંશોધન માટે કાર્યક્ષેત્ર અને પધ્ધતિઓ વિશે જાણશે .
Course Outcomes Semester –IV M.A. Gujarati		
Subject with code		Course Outcome
ગુજરાતી વિવેચન પરંપરા FAHM145201	CO1	વિદ્યાર્થીઓ વિવેચન અને તેના પ્રકારો વિશે માહિતગાર થાય .
	CO2	અર્વાચીન યુગના વિવેચકો વિશે સમજશે અને જાણશે .
	CO3	અર્વાચીન ગુજરાતી વિવેચકોનું પ્રદાન વિશે સમજશે.
	CO4	વિવેચન અને તેની પરંપરા વિશે જાણી જ્ઞાની બનશે .
કૃતિ અભ્યાસ :વિશ્વ સાહિત્ય FAHM145202	CO1	વિદ્યાર્થીઓ વિશ્વ સાહિત્ય કૃતિથી માહિતગાર થાય .
	CO2	વિશ્વની કૃતિઓનો અભ્યાસ કરી જાણશે .
		‘આગન્તુકા’ની વાર્તાઓનો આસ્વાદ કરશે.
	CO4	વિદ્યાર્થીઓ વિવિધ વિશ્વ સાહિત્ય કૃતિઓ જાણી જ્ઞાની બનશે .
ગુજરાતી ભાષાનું અધ્યયન FAHM145203	CO1	વિદ્યાર્થીઓ ગુજરાતી ભાષાથી માહિતગાર થાય .
	CO2	ભાષા વિશે સમજશે અને જાણશે.
	CO3	ગુજરાતની બોલીઓ વિશે જાણે અને સમજે.
	CO4	વિદ્યાર્થીઓ ગુજરાતી ભાષાને જાણી જ્ઞાની બનશે .
ભાષા અને સાહિત્ય કૌશલ્ય FAHM145204	CO1	વિદ્યાર્થીઓ સાહિત્ય કૌશલ્ય વિશે માહિતગાર થાય .
	CO2	ગુજરાતી સાહિત્ય લેખન વિશે સમજશે અને જાણશે.



	CO3	ગુજરાતી વ્યાકરણ વિશે જાણે.
	CO4	વિદ્યાર્થીઓ સાહિત્ય કૃતિઓનું અવલોકન કરી જ્ઞાની બનશે .
લોકસાહિત્યના સંશોધકો-સંપાદકોનો અભ્યાસ FAHM145205	CO1	વિદ્યાર્થીઓ લોકસાહિત્ય વિશે માહિતગાર થાય .
	CO2	લોકસાહિત્યના સંપાદક વિશે સમજશે અને જાણશે .
	CO3	ઉત્તર ગુજરાતના સંશોધકો વિશે સમજશે.
	CO4	વિદ્યાર્થીઓ લોકસાહિત્ય અને સંશોધન વિશે જાણી જ્ઞાની બનશે .



M.A.

HISTORY

Master of Arts (History)

Program Outcomes (POs)



PROGRAMME OUTCOMES (POs)

PO 1	Advanced Knowledge: Students will possess in-depth knowledge and expertise in their chosen field of study within the arts.
PO 2	Critical Thinking: Students will demonstrate advanced critical thinking skills in analyzing, evaluating, and synthesizing information within their discipline.
PO 3	Research Skills: Students will be proficient in conducting independent research, including the ability to design, execute, and present scholarly work.
PO 4	Effective Communication: Students will be skilled communicators, able to convey complex ideas and arguments through written, oral, and visual means.
PO 5	Ethical Awareness: Students will exhibit a strong understanding of ethical issues relevant to their field and demonstrate ethical decision-making skills.
PO 6	Interdisciplinary Perspective: Students will be able to integrate knowledge and methodologies from multiple disciplines to gain a comprehensive understanding of their subject matter.
PO 7	Cultural Competence: Students will demonstrate sensitivity and appreciation for diverse cultures and perspectives, enhancing their ability to engage with a global community.
PO 8	Professionalism: Students will exhibit professional behavior and attitudes, including effective teamwork, leadership, and adaptability in professional settings.
PO 9	Lifelong Learning: Students will possess the skills and motivation to engage in continuous learning and professional development throughout their careers.
PO 10	Social Impact: Students will recognize the potential impact of their work on society and demonstrate a commitment to contributing positively to their communities.



Master Of Arts (History)

Program Specific Outcomes (PSOs)



PSO1	Specialization Proficiency: Students will have developed a deep understanding and mastery of the specific area of specialization within their field of study.
PS0 2	Creative Expression: Students will demonstrate innovative and creative thinking, producing original work that contributes to the advancement of their discipline.



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Master Of Arts (History) Course Outcomes (COs)



Course Outcomes Semester-I M.A. HISTORY		
Subject with code		Course Outcome
Elements of Historical Methods FAHM115301	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
World Histor(Ancient Civilizations) FAHM 115302	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
History of Modern World (1850 to 1930) FAHM115303	CO1	Students can Explain how to world history
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about world history
History of India (320 B.C. -1206 A.D.) FAHM115304	CO1	Students can Explain how to Russian Revolution
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior



	CO4	Students can Such a problem and solution
	CO5	To Understand about Russian Revolution
Women in Indian History FAHM115205	CO1	Students can Explain how to women history
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about women in history

Course Outcomes Semester –II M.A. HISTORY

Subject with code		Course Outcome
Historiography FAHM125301	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
WorldHistory(Medieval & Early Modern) FAHM 125302	CO1	Students can Explain how to Christianity and islam
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about world in history
History of Modern World (1930 to 2000 A.D.)	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures



FAHM125303	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
History of India(1206 to 1526) FAHM125304	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
History of Anhilpur Patan FAHM125305	CO1	Students can Explain how to anhilpurpatan
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about anhilpur history

Course Outcomes Semester –III M.A. HISTORY		
Subject with code		Course Outcome
History Of Gujarat (746 TO 1304 A.D.) FAHM135301	CO1	Students can Explain how to Gujarat history
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution



	CO5	To Understand about history of Gujarat
State in India (Ancient, Medieval) FAHM135302	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
History of India (1526 to 1756) FAHM135303	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
Constitutional History of Independent India: 1947 to 1980 A.D. FAHM135304	CO1	Students can Explain how to India constitution
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about India constitution history
Politics in India (1947-1971A.D.) FAHM135305	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior



	CO4	Students can Such a problem and solution
	CO5	To Understand about Growth of party politics
Course Outcomes Semester-IV M.A. HISTORY		
Subject with code	Course Outcome	
History of Gujarat (1304 to 1572 A.D.) FAHM145301	CO1	Students can Explain how to Gujarat history
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about history of Gujarat
State In India (Modern) FAHM145302	CO1	Students can Explain how to Judicial system
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about) Administrative.
History of India (1757 A.D. -1857 A. D.) FAHM145303	CO1	Students can Explain how to research
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about methodology in history
History of Freedom Movement in India: (1858-1947 A.D.)	CO1	Students can Explain how to Civil Disobedience Movement
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior



FAHM145304	CO4	Students can Such a problem and solution
	CO5	To Understand about Freedom Movements history
MAJOR REVOLUTIONS OF MODERN WORLD FAHM145305	CO1	Students can Explain how to Revolution
	CO2	Use historical analyze the performance of firms under different structures
	CO3	To be Evaluate the factors affecting behavior
	CO4	Students can Such a problem and solution
	CO5	To Understand about Revolution in history



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COURSE OUTCOME

FACULTY OF SCIENCE



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B.Sc.

Bachelor of Science (B.Sc.)

PHYSICS

Batch 2018-21

Program Outcomes (PO)

GOKUL GLOBAL UNIVERSITY



Students of all undergraduate Science degree programs at the time of graduation will be able to learn:

PO 1: Foundational Knowledge: Graduates will possess a strong foundation in the fundamental concepts, theories, and principles of their chosen discipline, as per the prescribed curriculum.

PO 2: Practical Skills: Students will acquire practical skills relevant to their field, including laboratory techniques, data collection, analysis, and interpretation.

PO 3: Critical Thinking: Graduates will develop critical thinking skills to analyze, evaluate, and solve scientific problems, applying logical reasoning and evidence-based approaches.

PO 4: Effective Communication: Students will demonstrate effective communication skills, both orally and in writing, to convey scientific ideas and findings to different audiences.

PO 5: Collaboration and Teamwork: Graduates will work collaboratively in teams, engaging in effective communication, cooperation, and coordination to accomplish shared objectives.

PO 6: Information Literacy: Students will develop information literacy skills to access, evaluate, and utilize scientific information from diverse sources, including digital resources.

PO 7: Ethical Awareness: Graduates will demonstrate ethical awareness and responsibility in scientific practice, understanding the importance of integrity, honesty, and ethical conduct.

PO 8: Lifelong Learning: Students will develop a commitment to lifelong learning, staying updated with advancements in their field and engaging in continuous professional development.

PO 9: Societal Impact: Graduates will recognize the social and ethical implications of scientific knowledge and contribute positively to society through their discipline.



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B.Sc.

Bachelor of Science (B.Sc.)
PHYSICS
Batch 2018-21
Program Specific Outcomes (PSO)

GOKUL GLOBAL UNIVERSITY



Students after the completion of Graduation in Science Programs able to:

PSO 1: Physical Understanding and Application: Graduates of the B.Sc. Physics program will possess a thorough understanding of the principles and theories of physics. They will apply this knowledge to analyze and solve physical problems, design experiments, and make scientific observations.

PSO 2: Data Analysis and Modeling: Graduates will develop skills in data analysis, statistical methods, and mathematical modeling to interpret and predict physical phenomena. They will apply these skills to address real-world challenges and contribute to advancements in scientific research.



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B.Sc.

Bachelor of Science (B.Sc.)

PHYSICS

Batch 2018-21

Course Outcomes (COs)

GOKUL GLOBAL UNIVERSITY



Students of all undergraduate Science Programs at the time of graduation will be able to learn:

Course Outcomes Semester-1 B.Sc. (Physics)		
Subject with code		Course Outcome
Mechanics and Basic Electronics - BPHY101DSC	CO1	The student will be able to relate different kind of oscillations to standard differential equations. They will be able to explain various natural vibration phenomena.
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
Instrumentation Measurement and Analysis – BPHY101SE	CO1	The student will be able to relate different kind of instruments to standard their uses and analysis. They will be able to explain various parts of the instruments.
	CO2	Develop basic communication skills through working in groups, Apply the various procedures and techniques for the experiments

Course Outcomes Semester-2 B.Sc. (Physics)		
Subject with code		Course Outcome
Wave, Optics, Electrostatics & Semiconductor Device - BPHY201DSC	CO1	The student will be able to relate different kind of oscillations to standard differential equations. They will be able to explain various natural vibration phenomena
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
Electronic Circuit Elements And Energy Sources - BPHY201SE	CO1	The student will be able to relate different kind of instruments to standard their uses and analysis. They will be able to explain various parts of the instruments.
	CO2	Develop basic communication skills through working in groups, Apply the various procedures and techniques for the experiments



Course Outcomes Semester-3 B.Sc. (Physics)		
Subject with code		Course Outcome
Optics, Modern Physics & Laser – BPHY301DSC	CO1	The student will be able to understand different kind of diffraction types and its comparison between single slit and double slit grating and also understand resolving power of different optical instruments and its types.
	CO2	The student understands about polarization, types of polarized light, its production method, refraction types, and about laser types, properties, applications.
	CO3	In this section student understand about orbital and magnetic dipole moment, different conditions of it, different laws to support this theorem.
Solid State, Nuclear & Mathematical Physics - BPHY302DSC	CO1	The student will be able to understand cohesion of atom, different types of bond, different crystal structure, and some properties of acting on it and also learn about its related experimental model
	CO2	In this unit student will learn about elementary classification of particle, types of detectors, about radioactivity, and about the Q-equation.
	CO3	In this unit student will learn about Fourier series, application and different function of it, and also learn about co-ordinate transformation.
Astro/Space Physics - BPHY301SE	CO1	The student will be able to understand about sun, its radiation effect, different layers of atmospheres affected by radiation, and sunspot cycle.
	CO2	The student understands about different type of cosmic radiations effect of geomagnetic field on cosmic rays, its time variation, its origin, basic facts and region of confinement.

Course Outcomes Semester-4 B.Sc. (Physics)		
Subject with code		Course Outcome
Electromagnetism, Electronics & Plasma Physics - BPHY401DSC	CO1	The student will be able to know different kind of Magnetization, transistor biasing and different types A.C Bridge.
	CO2	They Develop their basic communication skills through working in groups in performing the laboratory



		experiments and by interpreting the results
	CO3	They also develop their basics instrumental knowledge with experiment skill and active their digital electronic calculation skill. They also get plasma related knowledge.
Quantum Mechanics, Solid State & Thermodynamics - BPHY402DSC	CO1	The student will be able to relate different kind of Schrodinger Equation. They will be able to explain various Normalization and Probability.
	CO2	Develop basic structure knowing skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO3	They learn different types of Relativity concept, Thermodynamics.
Vacuum Pumps, Pressure Gauges and Instruments - BPHY401SE	CO1	The student will be able to understand Exhaust Pumps and their characteristics, Different types of pumps and Pressure gauges, Different types of measurements errors. Learn the different Travelling Microscope working process and how its Different eyepiece use full.
	CO2	They Develop their skills through working in groups in performing the Instruments and by interpreting the results, They also develops their working Instruments knowledge, find the error of instruments and resolved the instruments measurements error.

Course Outcomes Semester-5 B.Sc. (Physics)

Subject with code		Course Outcome
Mathematical Physics, Classical Mechanics & Quantum Mechanics - BPHY501DSC	CO1	The student will be able to understand different kind of differential equations, a method of separation in different coordinates, Laplacian equation in different coordinates and 2nd order differential equation in regular singular point.
	CO2	The student understands about different types of lagrangian formulation for holonomic, non-holonomic constrain D'Alembert's principal, Rayleigh's dissipation function and Euler's theorem.
	CO3	In this section student understand about Schrodinger equation and probability interaction, fundamental postulate of wave mechanics, different types of operators



		there eigen value problem, eigen value functions, uncertainty principal and evolution of system with time constant of the motion.
Molecular Spectra, Statistical Mechanics & Solid-State Physics – BPHY502DSC	CO1	The student will be able to relate different kind of molecular spectra and statistical. They will be able to explain various solid-state physics.
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
Electromagnetism and Plasma Physics – BPHY503DSC	CO1	Electromagnetism has important scientific and technological applications.
	CO2	It is used in many electrical appliances to generate desired magnetic fields.
	CO3	It is even used in a electric generator to produce magnetic fields for electromagnetic induction to occur.
Electronics – BPHY504DSC	CO1	The student will be able to known the principal of Duality, different types of Bridge Networks, The Reciprocity theorem, The compensation theorem, Karnaugh Maps, Don't Care Conditions, BCD-to-7 Segment Decoder, Digital Comparator, Multiplexer, Demultiplexer. They we knowledge about Basic Transistor Amplifier like Current and Voltage amplifiers, Common Emitter Amplifiers with Emitter Resistor, Effect of An Emitter Bypass Capacitor in low frequency Response, also learn the different types of Multistage Amplifiers, Principle of Feedback Amplifiers, Advantages of Negative Feedback, Reasons for Negative Feedback, get knowledge about Transistor Oscillators like Tuned Collector Oscillators, Hartley Oscillator, Colpitt's Oscillators , Phase Shift oscillator, R-C-Oscillator, Wien Bridge Oscillator, Crystal Oscillator.
	CO2	They develop their basic communication & Computer coding skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO3	They also develop their basics instrumental knowledge



		with experiment skill and active their digital electronic calculation skill. They also get plasma related knowledge.
Instruments – BPHY501SE	CO1	The student will be able to understand about Michelson’s interferometer, babinet compensator its construction, principal, working, uses, applications.
	CO2	The student understands about C.R.O. its uses and about G.M. counters principal, working, construction, applications, advantages and limitations.

Course Outcomes Semester-6 B.Sc. (Physics)		
Subject with code		Course Outcome
Mathematical Physics, Classical Mechanics & Quantum Mechanics - BPHY601DSC	CO1	The student will learn about Legendre differential equation, its generating functions, Rodriguez’s formula, Hermite differential equation, its generating function, its recurrence formula, and Rodriguez’s formula.
	CO2	The student learns about different types of lagrangian formulation in advance, Hamiltonian equation of motion, its application, phase space, configuration space, some techniques of calculus of variation, application of variational principle.
	CO3	In this section student will learn about simple harmonic oscillator, Schrodinger equation and energy eigenvalues, energy eigenfunctions, property of stationary state, abstract operator method, coherent state, angular momentum operator, eigenvalue equation for L2 spherical harmonics, physical interpretation, parity, angular momentum in stationary states of systems with spherical symmetry.
Nuclear Physics - BPHY602DSC	CO1	The student will be able to relate the beta decays. They will be able to explain various reaction equations and related Q values and energy of beta particles.
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
Statistical Mechanics, Solid	CO1	Apply the definitions and results of statistical mechanics



State Physics, Optics - BPHY603DSC		to deduce physical properties of the systems studied in the lectures and other systems of similar complexity, drawing in part on your knowledge of the microstates of simple systems from core courses in quantum mechanics and solid-state physics.
	CO2	Calculate the density of states based on the Fermi statistics.
	CO3	Understand the principles of superconductivity
Electronics and C- Programming - BPHY604DSC	CO1	The student will be able to know different kind of modulation, basic concept of C language like Constants, Variables & Data Types, Operators and Expressions.
	CO2	They develop their basic communication & Computer coding skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO3	They also develop their basics instrumental knowledge with experiment skill and active their digital electronic calculation skill. They also get plasma related knowledge.
Atmospheric Science - BPHY602SE	CO1	The student will be able to understand about evolution of earth's atmosphere, different kind of gases and carbon containing compounds in atmosphere, ozone and neutral chemistry, chemical and photochemical processes, eddy diffusion and turbulence.
	CO2	The student understands about concentration and size, sources and transformation chemical composition, transport and sinks, residence time of aerosols, geographic distribution and atmospheric effect, air pollution, sources of anthropogenic pollution, emission inventory, atmospheric effects- smog, visibility, measurement of particulate matters and knowledge about Sox, NOx, and CO.



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B.Sc.

**Bachelor of Science (B.Sc.) Zoology
Batch 2018-21
Program Outcome (PO)**

GOKUL GLOBAL UNIVERSITY



-
- Students of all Undergraduate Zoology Degree Programs at the time of graduation will be able to learn

BACHELOR OF SCIENCE PROGRAM OUTCOMES (PO)

- PO1** Foundational Knowledge: Graduates will possess a strong foundation in the fundamental concepts, theories, and principles of their chosen discipline, as per the prescribed curriculum.
- PO2** Practical Skills: Students will acquire practical skills relevant to their field, including laboratory techniques, data collection, analysis, and interpretation.
- PO3** Critical Thinking: Graduates will develop critical thinking skills to analyze, evaluate, and solve scientific problems, applying logical reasoning and evidence-based approaches.
- PO4** Effective Communication: Students will demonstrate effective communication skills, both orally and in writing, to convey scientific ideas and findings to different audiences.
- PO5** Collaboration and Teamwork: Graduates will work collaboratively in teams, engaging in effective communication, cooperation, and coordination to accomplish shared objectives.
- PO6** Information Literacy: Students will develop information literacy skills to access, evaluate, and utilize scientific information from diverse sources, including digital resources.
- PO7** Ethical Awareness: Graduates will demonstrate ethical awareness and responsibility in scientific practice, understanding the importance of integrity, honesty, and ethical conduct.

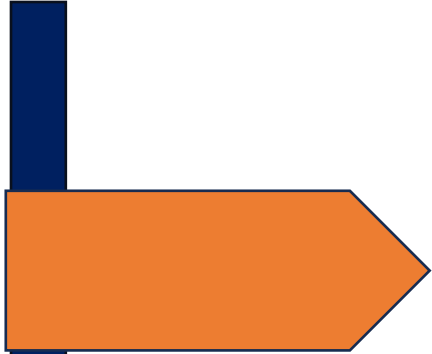


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- PO8** Lifelong Learning: Students will develop a commitment to lifelong learning, staying updated with advancements in their field and engaging in continuous professional development.
- PO9** Societal Impact: Graduates will recognize the social and ethical implications of scientific knowledge and contribute positively to society through their discipline.



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B.Sc.

**Bachelor of Science (B.Sc.) Zoology
Batch 2018-21
Program Specific Outcome (PSO)**

GOKUL GLOBAL UNIVERSITY



-
- Students of all Undergraduate Zoology Degree Programs at the time of graduation will be able to learn

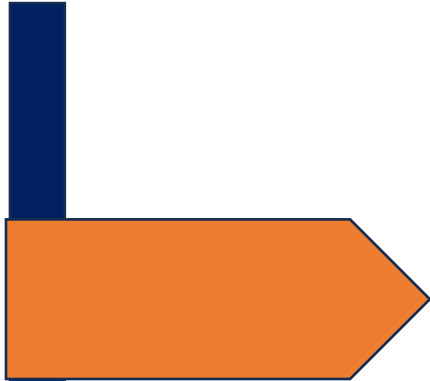
PROGRAM SPECIFIC OUTCOME DESCRIPTION (PSO)

- PSO1** Zoological Knowledge and Diversity: Graduates of the B.Sc. Zoology program will acquire a comprehensive understanding of animal biology, including animal morphology, physiology, taxonomy, and behaviour. They will be able to identify and classify diverse animal species.
- PSO2** Animal Conservation and Wildlife Management: Graduates will demonstrate an understanding of animal conservation principles and possess skills to manage and protect animal habitats. They will contribute to wildlife conservation efforts, conduct research on animal behaviour and ecology, and promote sustainable wildlife management practices.



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B.Sc.

Bachelor of Science (B.Sc.) Zoology
Batch 2018-21
Course Outcome (COs)

GOKUL GLOBAL UNIVERSITY



- Students of all Undergraduate Zoology Degree Programs at the time of graduation will be able to learn

Course Outcome Semester -I B.Sc. (Zoology)		
Subject with code		Course Outcome
NON-CHORDATES I: PROTISTA TO PSEUDOCOELOMATES BZOO101UDSC	CO1	After thorough understanding of this unit students will be able to explain about the importance of systematics, taxonomy and structural organization of animals. Also, general characteristics and classification of phylum Protista.
	CO2	From this unit student will learn about general characteristics and classification of phylum Porifera, Cnidaria.
	CO3	From this unit student will learn about general characteristics and classification of phylum Platyhelminthes.
	CO4	From this unit student will be able to comprehend the economic importance of non-chordates, their interaction with the environment and role in ecosystem. Also, Platyhelminthes and Nematode related diseases.
WETLAND ECOLOGY BZOO101USE	CO1	From this unit Student will learn about history and classification of wetland.
	CO2	Students will learn about importance of wetland of types of wetlands.
	CO3	Students learn human impact and management of wetlands
	CO4	Students learn skill and law and protection



Course Outcome Semester -II B.Sc. (Zoology)		
Subject with code		Course Outcome
NON-CHORDATES II: COELOMATES BZOO201UDSC	CO1	Students will learn about general characteristics, importance of systematics, taxonomy and structural organization of Animals [Mollusca].
	CO2	They will understand about general characteristics, importance of systematics, taxonomy, economic importance structural organization of Animals [Annelida].
	CO3	Students learn about how organism are classified based in non-chordates and their identification, characteristics, classification, economic importance of Animals [Arthropoda].
	CO4	Students learn about how organism are classified based in non-chordates on their complexity organization and characteristics, importance of systematics, taxonomy, structural organization of animals. [Echinodermata, Hemichordata]
ENVIRONMENTAL POLLUTION AND CLIMATE CHANGE BZOO201USE	CO1	Students learn about Air and Noise pollution
	CO2	Students learn about water pollution
	CO3	Students learn about skills of pollution control methods
	CO4	Students learn about effect of climate change and public health



Course Outcome Semester -III B.Sc. (Zoology)		
Subject with code		Course Outcome
PRINCIPLES OF ECOLOGY BZOO301UDSC	CO1	After thorough learning of this course student will understand the population and community characteristics ecosystem development and climax theories.
	CO2	Knowledge about the type of ecosystem food chains food web energy modals and ecological efficiencies.
	CO3	They will understand about the paramount role and importance of nature.
	CO4	It will impact then with the knowledge about the judicious use of existing ecological recourse for sustainable development.
CHORDATES- I BZOO302UDSC	CO1	Understand the evolution history and relationship between the different classes of chordates.
	CO2	Know the different characteristic along with their habit's habitats and distribution of the chordates.
	CO3	Understand the significance of the difference in physiological system between the vertebrates.
	CO4	Distinguish the significance of chordates from other lower organism and comprehend their advantages.
	CO1	Participants will gain a nuanced understanding of natural and man-made disasters, adeptly assessing risk parameters and applying national guidelines for



DISASTER MANAGEMENT BZOO301USE		categorization and intervention at different levels.
	CO2	Participants will master disaster risk assessment, understand the key components of effective disaster management
	CO3	Student will understand the pivotal roles played by governments and NGOs through insightful case studies in the field of disaster management.
	CO4	Student will study different type of disaster

Course Outcome Semester -IV B.Sc. (Zoology)		
Subject with code		Course Outcome
COMPARATIVE ANATOMY OF VERTEBRATES BZOO401UDSC	CO1	To impart students with a comprehensive understanding of vertebrate morphology, encompassing the integumentary system
	CO2	To facilitate comparative analysis across vertebrate groups, enabling students to recognize anatomical variations and adaptations.
	CO3	To equip students with the knowledge and skills necessary for careers in biology, zoology, and veterinary sciences by fostering a deep appreciation for vertebrate structure and function.
	CO4	To impart students with a comprehensive understanding of vertebrate digestive and respiratory organs, skeletal structures, receptors, and nervous systems



CHORDATES- II BZOO402UDSC	CO1	Understand the evolutionary history and relationship between the different classes of chordates.
	CO2	Know the different characteristics along with their habits and distribution of the chordates.
	CO3	Understand the significance of the different in physiological systems between the vertebrates.
	CO4	Distinguish the significance of the chordates from other lower organisms and comprehend their advantages
LIMNOLOGY BZOO401USE	CO1	limnology is a comprehensive, integrated, scientific understanding of inland waters.
	CO2	limnologists are working on construction of artificial wetlands, which could serve as habitats for a variety of animal and plant species and aid in decreasing water pollution.
	CO3	Limnology is the study of the structural and functional interrelationships of organisms of inland waters as their dynamic physical, chemical, and biotic environments affect them.
	CO4	Freshwater biology is the study of the biological characteristics and interactions of organisms of fresh waters.



Course Outcome Semester -V B.Sc. (Zoology)		
Subject with code		Course Outcome
MOLECULAR AND CELLULAR BIOLOGY BZOO501UDSC	CO1	In this concept of Cell Biology student will learn about basic functional unit of living body, prokaryotic and eukaryotic cell organization.
	CO2	In this unit student will understand about concept of intra-inter molecular interaction and also get deep understanding in structure function and properties of carbohydrate and lipids.
	CO3	From this unit student will get to know about composition of nucleic acid, nucleotide, DNA, RNA.
	CO4	Student will learn about DNA Replication, Lac operon and Tryptophan operon.
DEVELOPMENTAL BIOLOGY BZOO502UDSC	CO1	In this concept of Developmental Biology student will learn about history of developmental biology and fundamentals of gametogenesis.
	CO2	From this unit student will get deep knowledge about process of fertilization, physiological changes during fertilization and gastrulation. One will also get to learn about development of frog and chick embryo.
	CO3	In this unit student will learn about internal(mammals) and external fertilization(amphibian), neurulation in frog embryo, vitellogenesis in birds.
	CO4	In this unit student will learn about internal(mammals) and external



		fertilization(amphibian), neurulation in frog embryo, vitellogenesis in birds.
BIOSTATISTICS, TOOLS AND TECHNIQUES BZOO503UDSC	CO1	From this unit student will get understanding in basic of biostatics, Sampling methods and Measures of central tendency.
	CO2	In this unit students will learn about principle, working procedure and application of simple, light and compound microscope also about SEM and TEM.
	CO3	From this unit student will get a knowledge about principle and uses, types of the various instruments (pH meter, calorimeter, microtome, spectrophotometer, centrifuge, electrophoresis).
	CO4	Historical prospective, classification of chromatography, principle, working procedure and application of chromatography.
BIODIVERSITY AND CONSERVATION BIOLOGY BZOO504UDSC	CO1	In this unit of biodiversity and conservation biology student will learn about values of biodiversity and conservation ethics, loses and threats to biodiversity, biological consequences of different effects (crowd effect, habitat fragmentation...) Also, significance of ecological restoration in conservation.
	CO2	In this unit student will understand about biodiversity hotspots, important protected areas in India and Gujarat. Significance and types of conservation, role of protected areas in biodiversity conservation in India.



	CO3	From this unit student will learn about major conservation projects (project tiger, project elephant).
	CO4	Also, about conservation significance. laws, policies, about the IUCN and various acts for wildlife protection and biodiversity conservation
FISHERIES SCIENCE BZOO501USE	CO1	In this unit student will understand the basic nutritional requirements of fishes, recognize different prescription diets on the animals' basic indications for use.
	CO2	From this unit student will get to know about main stages of embryonic and larval development.
	CO3	Hormonal changes behavioural changes that occur across the breeding period.
	CO4	Students will learn about different fish culture methods



Course Outcome Semester -VI B.Sc. (Zoology)		
Subject with code		Course Outcome
BIOCHEMISTRY AND ANALYTICAL TECHNIQUES BZOO601UDSC	CO1	From this unit student will understand about basics of biochemistry, like protein structure and function and carbohydrate and glucose metabolism. Also, characteristics of lipids, metabolism of dietary lipids, fatty acid and glycerol.
	CO2	In this unit student will understand about characteristics and types of amino acids, nucleotide metabolism, metabolic effects of insulin, and DNA-RNA structure and replication.
	CO3	From this unit student will learn about electrochemistry (pH, buffers, Potentiometric and conduct metric titration) also about Microscopy.
	CO4	Students will learn about function and classification of proteins.
GENETICS BZOO602UDSC	CO1	In this unit student will understand about history of genetics, pre-mendelian genetic concepts, concept of phenotype, genotype, heredity, variation, pure lines and Inbred lines.
	CO2	From this unit students get deep understanding of Mendelian genetics and Its Extension.
	CO3	In this unit student will learn about various kind of Mutation and their application
	CO4	Students will learn about molecular basis of genetic information.



ANIMAL BEHAVIOUR AND EVOLUTION BZOO603UDSC	CO1	In this unit student will understand about introduction animal behaviour, concepts of animal behaviour, fixed action pattern, sign stimulus, innate behaviour and approaches and methods to study animal behaviour.
	CO2	From this unit student will understand about brief history of evolution, direct and indirect evidences of evolution.
	CO3	In this unit student will learn about communication in animals, types of parental care, role of pheromones and hormones in animal behaviour.
	CO4	Students will learn about various theories of evolution, Hardy-Weinberg law and living fossils.
ECONOMIC ZOOLOGY AND TOXICOLOGY BZOO604UDSC	CO1	Students will learn about scope of economic zoology, harmful and beneficial aspects of pest.
	CO2	Different marine and fresh water aquaculture practices in India.
	CO3	Basic understanding of the field of toxicology.
	CO4	Importance of animals in pharmaceutical.
	CO1	In this unit student will understand about estimating number of wildlife (census technique), measuring habitat use, and wildlife habitat evaluation and population monitoring techniques.
	CO2	From this unit student will understand about human wildlife interaction and immobilization and rescue of wildlife.



WILDLIFE BIOLOGY BZOO603USE	CO3	Students will learn about certain species roles in an ecosystem.
	CO4	Students will discover that life can be found almost everywhere on earth.



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Bachelor of Science (B.Sc.) (Mathematics)
Batch 2018-21
Program Outcome (PO)



Program Outcomes: At the end of the Program, students shall be able to

PO No.	Program Outcome Description
PO1	Foundational Knowledge: Graduates will possess a strong foundation in the fundamental concepts, theories, and principles of their chosen discipline, as per the prescribed curriculum.
PO2	Practical Skills: Students will acquire practical skills relevant to their field, including laboratory techniques, data collection, analysis, and interpretation.
PO3	Critical Thinking: Graduates will develop critical thinking skills to analyze, evaluate, and solve scientific problems, applying logical reasoning and evidence-based approaches.
PO4	Effective Communication: Students will demonstrate effective communication skills, both orally and in writing, to convey scientific ideas and findings to different audiences.
PO5	Collaboration and Teamwork: Graduates will work collaboratively in teams, engaging in effective communication, cooperation, and coordination to accomplish shared objectives.
PO6	Information Literacy: Students will develop information literacy skills to access, evaluate, and utilize scientific information from diverse sources, including digital resources.
PO7	Ethical Awareness: Graduates will demonstrate ethical awareness and responsibility in scientific practice, understanding the importance of integrity, honesty, and ethical conduct.
PO8	Lifelong Learning: Students will develop a commitment to lifelong learning, staying updated with advancements in their field and engaging in continuous professional development.
PO9	Societal Impact: Graduates will recognize the social and ethical implications of scientific knowledge and contribute positively to society through their discipline.



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Bachelor of Science (B.Sc.)(Mathematics)
Batch 2018-21
Program Specific Outcome (PSO)



Program specific outcome

PSO No.	Program Specific Outcome Description
PSO1	Mathematical Proficiency: Graduates of the B.Sc. Mathematics program will possess a strong foundation in mathematical concepts, theories, and techniques. They will demonstrate proficiency in mathematical reasoning, problem-solving, and the application of mathematical tools and methods in various domains.
PSO2	Analytical Thinking and Modeling: Graduates will develop advanced analytical thinking skills and the ability to construct mathematical models to represent and solve real-world problems. They will apply mathematical principles to analyze data, make predictions, and provide insights in fields such as finance, engineering, and computer science.



Course Outcomes Semester-I B.Sc (Mathematics)		
Subject with code		Course Outcomes
DIFFERENTIAL CALCULUS BMAT101DSC	CO1	The students will be solve differentiable equation, define power series and solve other equation of cone, sphere.
	CO2	Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bendiness of a curve.
	CO3	Solve first-order linear/nonlinear ordinary differential equations analytically using standard methods
	CO4	Learn various techniques of getting exact solutions of solvable first order differential equations and linear differential equations of higher order.
BUSINESS MATHEMATICS – I BMAT101SE	CO1	Understanding the application of Differentiation.
	CO2	Know about the Business Application of Derivatives.
	CO3	Study and use Hedging parameters, trading strategies and currency swaps.

Course Outcomes Semester-II B.Sc (Mathematics)		
Subject with code		Course Outcomes
INTEGRAL CALCULUS & DIFFERENTIAL EQUATION BMAT201DSC	CO1	Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.
	CO2	Compare and contrast the ideas of continuity and differentiability
	CO3	To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function.
	CO4	Solve basic application problems described by second order linear differential equations with constant coefficients.
BUSINESS MATHEMATICS – II BMAT201SE	CO1	Understanding the application of Integral Calculus.
	CO2	find indefinite integration by using direct formulae
	CO3	Know about the Permutations and Combinations.



Course Outcomes Semester-III B.Sc (Mathematics)		
Subject with code		Course Outcomes
LINEAR ALGEBRA AND CALCULUS BMAT301DSC	CO1	Linear Algebra emphasizes the concept of vector spaces and linear transformations which are essential in simplifying various scientific problems.
	CO2	It aims at inculcating problem solving skills within students to enable them compute large linear systems.
	CO3	Vector calculus motivates the study of vector differentiation and integration in two and three dimensional spaces.
	CO4	Understand the combination of two important aspects of modern mathematics via Linear Algebra and Vector Calculus.
NUMERICAL ANALYSIS BMAT302DSC	CO1	The course will cover the classical fundamental topics in numerical methods such as, approximation, numerical integration, and numerical linear algebra, solution of nonlinear algebraic systems and solution of ordinary and partial differential equations.
	CO2	Understand the difference operators and the use of interpolation
	CO3	Code a numerical method in a modern computer language.
	CO4	Evaluate a derivative at a value using an appropriate numerical method
BUSINESS MATHEMATICS – III BMAT301SE	CO1	Understand the importance of Leaders and Leadership in the context of Business Organizations.
	CO2	Know about the Permutations and Combinations.
	CO3	Understand the important role Mathematics plays in all facets of the business world

Course Outcomes Semester-IV B.Sc (Mathematics)		
Subject with code		Course Outcomes
ADVANCED CALCULUS BMAT401DSC	CO1	Perform the vector calculus operations by applying addition, subtraction, scalar multiplication, dot product, and cross product.
	CO2	Take derivatives of multivariable functions by using appropriate rules.
	CO3	Work with power series by applying the iterated derivatives.
	CO4	Students will be able to perform vector calculus operations by partial derivatives, and



		matrix partial derivatives.
	CO5	Do double and triple integrals by applying appropriate methods and rules. Students will be able to differentiate vectors to understand gradient, divergence and curl by using the appropriate rules.
ADVANCED LINEAR ALGEBRA BMAT402DSC	CO1	Solve an algebraic or transcendental equation using an appropriate numerical method.
	CO2	Calculate a definite integral using an appropriate numerical method.
	CO3	Approximate a function using an appropriate numerical method.
	CO4	Evaluate a derivative at a value using an appropriate numerical method.
BUSINESS MATHEMATICS – IV BMAT401SE	CO1	Understand the concept of Laplace Transforms, Inverse Laplace Transform and its application.
	CO2	Understand the important role Mathematics plays in all facets of the business world
	CO3	Understand the different Determinants of Individual Behavior and how these can be used for the benefit of the Organization

Course Outcomes Semester-V B.Sc (Mathematics)		
Subject with code		Course Outcomes
GROUP THEORY – I BMAT501DSC	CO1	Understand the concept of group & a finite cyclic group.
	CO2	Extend group structure to finite permutation groups.
	CO3	Solve problem in group theory & prove new definitions and theorems.
	CO4	Understand, formulate and use quantitative models arising in social science, business and other contexts
MATHEMATICAL ANALYSIS – I BMAT502DSC	CO1	Understand the concept of number system.
	CO2	Develop an understanding of basic topology.
	CO3	Gain knowledge about sequence and series.
	CO4	To learn basic properties of real numbers and its subsets which is backbone of Real Analysis.
DIFFERENTIAL EQUATION	CO1	Will be able to explain the concept of differential equation.
	CO2	Can solve the problems of linear differential equations.



BMAT503DSC	CO3	Compute all the solutions of second and higher order linear differential equations with constant coefficients, linear equations with variable coefficients.
	CO4	Solve simultaneous linear equations with constant coefficients and total differential equations.
OPERATIONS RESEARCH – I BMAT504DSC	CO1	Solve real world problems using different Mathematical technique.
	CO2	Be able to build and solve Transportation Models and Assignment Models.
	CO3	Define basic components of Network and find critical path
	CO4	Define queue characteristics , transient and steady state
BUSINESS MATHEMATICS – V BMAT501SE	CO1	Calculating the degree of certainty of events in ideal conditions.
	CO2	Solve Business and finance problems.
	CO3	After completion of this course students will be able to

Course Outcomes Semester-VI B.Sc (Mathematics)		
Subject with code		Course Outcomes
RING THEORY BMAT601DSC	CO1	Understand the concept of group & a finite cyclic group.
	CO2	Extend group structure to finite permutation groups.
	CO3	Solve problem in Ring theory & prove new definitions and theorems.
	CO4	To study the Rings of polynomials and its factorization over a field.
MATHEMATICAL ANALYSIS – II BMAT602DSC	CO1	Define metric and metric space.
	CO2	Develop an understanding of Riemann – Stieltje’s integral.
	CO3	Gain knowledge about sequence and series of function.
	CO4	To be able to check continuity of a function.
TOPOLOGY BMAT603DSC	CO1	Demonstrate an understanding of the concepts of metric spaces and topological spaces, and their role in mathematics.



	CO2	Demonstrate familiarity with a range of examples of these structures.
	CO3	Prove basic results about completeness, compactness, connectedness and convergence within these structures.
	CO4	The Definition and some examples, Elementary concepts, Open bases and Open sub bases, Weak topologies.
OPERATIONS RESEARCH – II BMAT604DSC	CO1	Understand the concept of transportation models and assignment problem.
	CO2	Develop an understanding of sequencing problems.
	CO3	Gain knowledge about game theory and dominance principle.
	CO4	This helps them to get optimum solutions within the given constraints to problems arising in industry.
BUSINESS MATHEMATICS – VII BMAT601SE	CO1	Develop linear programming (LP) models for shortest path, maximum flow.
	CO2	Analysis the general nonlinear programming problems.
	CO3	Formulate the nonlinear programming models.



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Bachelor of Science (B.Sc.) Microbiology
Batch 2018-21
Program Outcome (PO)



PO No.	Program Outcome Description
PO1	Foundational Knowledge: Graduates will possess a strong foundation in the fundamental concepts, theories, and principles of their chosen discipline, as per the prescribed curriculum.
PO2	Practical Skills: Students will acquire practical skills relevant to their field, including laboratory techniques, data collection, analysis, and interpretation.
PO3	Critical Thinking: Graduates will develop critical thinking skills to analyze, evaluate, and solve scientific problems, applying logical reasoning and evidence-based approaches.
PO4	Effective Communication: Students will demonstrate effective communication skills, both orally and in writing, to convey scientific ideas and findings to different audiences.
PO5	Collaboration and Teamwork: Graduates will work collaboratively in teams, engaging in effective communication, cooperation, and coordination to accomplish shared objectives.
PO6	Information Literacy: Students will develop information literacy skills to access, evaluate, and utilize scientific information from diverse sources, including digital resources.
PO7	Ethical Awareness: Graduates will demonstrate ethical awareness and responsibility in scientific practice, understanding the importance of integrity, honesty, and ethical conduct.
PO8	Lifelong Learning: Students will develop a commitment to lifelong learning, staying updated with advancements in their field and engaging in continuous professional development.
PO9	Societal Impact: Graduates will recognize the social and ethical implications of scientific knowledge and contribute positively to society through their discipline.



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Bachelor of Science (B.Sc.) Microbiology
Batch 2018-21
Program Specific Outcome (PSO)



Students after the completion of graduation in Bachelor of Science in Microbiology able to:

PSO No.	Program Specific Outcome Description
PSO1	Microbiological Proficiency: Graduates of the B.Sc. Microbiology program will acquire in-depth knowledge of microorganisms, their structure, physiology, and genetics. They will demonstrate proficiency in microbiological techniques, including isolation, identification, and characterization of microorganisms.
PSO2	Applied Microbiology and Research Skills: Graduates will apply their knowledge of microbiology to solve practical problems in various sectors such as healthcare, agriculture, and environmental management. They will possess research skills to investigate microbial processes, conduct experiments, and analyze and interpret microbial data.



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Bachelor of Science (B.Sc.) Microbiology
Batch 2018-21
Course Outcome (COs)



Course Outcomes B.Sc Sem- I Microbiology

Subject with Code		Course Outcome
FUNDAMENTAL OF MICROBIOLOGY- BMIC101DSC	CO1	Students will gain knowledge about history of microbiology.
	CO2	Demonstrate theory in microscopy and their handling techniques and staining procedure.
	CO3	Know Various characteristics of microorganisms.
	CO4	Students will be learn about microorganisms structure and functions.

Course Outcomes B.Sc Sem- II Microbiology

Subject with Code		Course Outcome
MICROBIAL PHYSIOLOGY AND BIODIVERSITY – BMIC201DSC	CO1	Students will gain knowledge about bacterial cell size, shape, arrangement, detail structure of flagella, pilli, cell wall, cell membrane.
	CO2	Students will gain knowledge about virology and mycology.
	CO3	Knowledge about different types of Microbial growth.

Course Outcomes B.Sc Sem- III Microbiology

Subject with Code		Course Outcome
MICROBIAL PHYSIOLOGY AND METABOLISM - BMIC301DSC	CO1	Students will gain knowledge of competitive, non-competitive inhibition of enzyme, Media formulation, Enzyme classification, Chemotherapy.
	CO2	Students will also study EMP, TCA, Pentose Phosphate pathway, Alcohol fermentation, lactate fermentation, Importance of carbohydrates, proteins, lipids, nucleic acid.
SOIL AND WATER MICROBIOLOGY- BMIC302DSC	CO1	Students will study about role of microorganisms in soil, role of microorganisms in sulphar cycle, iron cycle, phosphorus cycle, nitrogen cycle.
	CO2	Students will also learn about Quantitative & Qualitative analysis of drinking water, filtration, sedimentation, Primary and secondary waste water treatment procedure.
MICROBIAL ANALYSIS OF AIR AND WATER-	CO1	Demonstrate theory in Laboratory for SPC, MPN, Membrane filter technique.



BMIC301SE	CO2	Students will gain knowledge about air born microorganisms impact on human health, its importance in pharma and food industries and inactivation mechanisms (UV light, desiccation etc), water born diseases.
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Course Outcomes B.Sc Sem- IV Microbiology

Subject with Code		Course Outcome
MICROBIAL BIODIVERSITY –BMIC401DSC	CO1	Students will gain knowledge of evolution and origin of biodiversity, Biochemical, Molecular, Genomic and metabolic cultural methods, Evolutionary tree.
	CO2	Students will Study Physiological, metabolic, Morphological, Cellular and ecological diversity, Lichens.
FOOD AND DAIRY MICROBIOLOGY – BMIC402DSC	CO1	Students will learn about microbial flora of food , Major food born disease, Pasteurization, sterilization, canning, Refrigeration, Freezing.
	CO2	Students will gain knowledge about Staphylococcus aureus food poisoning, Botulism, Biochemical changes in food by microbes, Role of microbes in kefir , kumis, pickles, importance of probiotics, Bacteriological analysis of food by CFU and MPN.
FOOD FERMENTATION TECHNIQUES - BMIC401SE	CO1	Students will learn about the different types of fermentation processes, equipment's used and microbiological processes involved.
	CO2	Students will gain knowledge of significance and activities of microorganisms in food.
	CO3	Students will gain knowledge about microbiology of milk & fermented products.
	CO4	Students will also know the microbial quality control and quality schemes used in food industries.
	CO5	Students will gain knowledge about microbiology of grain & vegetables based fermented foods, Microbiology of fermented meat and fish, & Probiotics foods.



Course Outcomes B.Sc Sem- V Microbiology

Subject with Code		Course Outcome
MOLECULAR BIOLOGY – BMIC501DSC	CO1	Molecular Biology gives you in-depth knowledge of biological and/or medicinal processes through the investigation of the underlying molecular mechanisms
	CO2	You will gain an understanding of chemical and molecular processes that occur in and between cells
IMMUNOLOGY – BMIC502DSC	CO1	Demonstrate theory in microscopy and their handling techniques and staining procedure.
	CO2	Know Various characteristics of microorganisms and also understand various physical and chemical means of sterilization.
CLASSICAL GENETICS – BMIC503DSC	CO1	Students will learn relationship between genes and traits, various fields, law of dominance, independent inheritance, monohybrid and dihybrid cross, law of segregation, Probability, chi-square analysis.
	CO2	Students will gain knowledge about basics of gene, genome, Chromosomes and its types, centromere, sex determination in drosophila, Mitosis, meiosis, types of crossing over, tetrad analysis.
GENE TRANSFER TECHNIQUES- BMIC504DSC	CO1	Students will gain knowledge about principle of recombination and its types, and their molecular mechanisms, in vitro plasmid transfer and plasmid replication, Various plasmids and its properties.
	CO2	Students will learn Molecular mechanisms of transformation, Types of transduction, specialized transducing particle formation from lysogen, Hfr transfer, Rec A protein and its function.
HEMATOLOGY AND BLOOD BANKING- BMIC501SE	CO1	Students will learn about blood grouping, Major and minor cross matching, blood transfusion and collection.
	CO2	Students will gain basic knowledge about blood, plasma, serum, WBC and RBC.



Course Outcomes B.Sc Sem- VI Microbiology

Subject with Code		Course Outcome
MEDICAL MICROBIOLOGY – BMIC601DSC	CO1	The student will be able to identify common infectious agents and the diseases that they cause.
	CO2	The student will be able to evaluate methods used to identify infectious agents in the clinical microbiology lab.
	CO3	The student will be able to recall microbial physiology including metabolism, regulation and replication.
RECOMBINANT DNA TECHNOLOGY – BMIC602DSC	CO1	Technical know-how on versatile techniques in recombinant DNA technology.
	CO2	An understanding on application of genetic engineering techniques in basic and applied experimental biology.
INDUSTRIAL MICROBIOLOGY – BMIC603DSC	CO1	Industrial microbiology gives you in depth knowledge of growth kinetics and strain improvement.
	CO2	Student will gain an understanding of chromatography, preservation techniques, Quality assurance bioassay, Drying & Crystallization, Distillation.
BIOPROCESS TECHNOLOGY - BMIC604DSC	CO1	Students will gain detail knowledge of single cell protein production and its benefits, Microbial enhance oil recovery, bioleaching of copper, gold, and silver.
	CO2	Students will learn about microbial processes in agriculture for biopesticides, insecticides, Agitation and Aeration process of fermentation.
INSTRUMENTATION AND BIOTECHNIQUES - BMIC601SE	CO1	Development of skills related to handling of instruments.
	CO2	Enabling the students to design & standardize various analyses, processes and separation techniques.
	CO3	At the end of the course, the student has the basic knowledge on the theory, operation and function of analytical instruments.



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Bachelor of Science (B.Sc.) (Chemistry)
Batch 2018-21
Program Outcome (PO)



Program Outcomes: At the end of the Program, students shall be able to

PO No.	Program Outcome Description
PO1	Foundational Knowledge: Graduates will possess a strong foundation in the fundamental concepts, theories, and principles of their chosen discipline, as per the prescribed curriculum.
PO2	Practical Skills: Students will acquire practical skills relevant to their field, including laboratory techniques, data collection, analysis, and interpretation.
PO3	Critical Thinking: Graduates will develop critical thinking skills to analyze, evaluate, and solve scientific problems, applying logical reasoning and evidence-based approaches.
PO4	Effective Communication: Students will demonstrate effective communication skills, both orally and in writing, to convey scientific ideas and findings to different audiences.
PO5	Collaboration and Teamwork: Graduates will work collaboratively in teams, engaging in effective communication, cooperation, and coordination to accomplish shared objectives.
PO6	Information Literacy: Students will develop information literacy skills to access, evaluate, and utilize scientific information from diverse sources, including digital resources.
PO7	Ethical Awareness: Graduates will demonstrate ethical awareness and responsibility in scientific practice, understanding the importance of integrity, honesty, and ethical conduct.
PO8	Lifelong Learning: Students will develop a commitment to lifelong learning, staying updated with advancements in their field and engaging in continuous professional development.
PO9	Societal Impact: Graduates will recognize the social and ethical implications of scientific knowledge and contribute positively to society through their discipline.



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Bachelor of Science (B.Sc.) (Chemistry)
Batch 2018-21
Program Specific Outcome (PSO)



Program specific outcome

PSO No.	Program Specific Outcome Description
PSO1	CHEMICAL KNOWLEDGE AND APPLICATION: GRADUATES OF THE B.SC. CHEMISTRY PROGRAM WILL POSSESS A COMPREHENSIVE UNDERSTANDING OF THE PRINCIPLES AND THEORIES OF CHEMISTRY. THEY WILL APPLY THIS KNOWLEDGE TO ANALYZE CHEMICAL PHENOMENA, CONDUCT EXPERIMENTS, AND SOLVE COMPLEX CHEMICAL PROBLEMS.
PSO2	LABORATORY SKILLS AND SAFETY: GRADUATES WILL DEMONSTRATE PROFICIENCY IN LABORATORY TECHNIQUES, INCLUDING CHEMICAL SYNTHESIS, ANALYSIS, AND INSTRUMENTATION. THEY WILL PRIORITIZE SAFETY PROTOCOLS, ADHERE TO ETHICAL PRACTICES, AND EFFECTIVELY COMMUNICATE EXPERIMENTAL FINDINGS.



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Bachelor of Science (B.Sc.) (Chemistry)
Batch 2018-21
Program Specific Outcome (COs)



Course Outcomes Semester-I B.Sc (Chemistry)		
Subject with code		Course Outcomes
INORGANIC- ORGANIC CHEMISTRY & VOLUMETRIC ANALYSIS BCHE101UDSC	CO1	The students will learn the important analytical and instrumental tools used for practicing chemistry.
	CO2	To develop interest among students in various branches of inorganic chemistry.
	CO3	To impart students a broad outline of the methodology of science in general and Chemistry in particular.
	CO4	To impart essential theoretical knowledge on atomic structure, periodic properties and chemical bonding.
	CO5	To develop skills for quantitative estimation using the different branches of volumetric Analysis
AGRICULTURAL CHEMISTRY BCHE101USE	CO1	Student after learning this course can seek employment in areas of Agriculture, farms, Educational Institutes etc as Junior Scientist, Assistant Professor, Content Developer, and Researcher etc.
	CO2	Student will be able to relate different kind of Nutrients and Insecticide for standard their uses. They will be able to explain various types of Nutrients and Insecticide.
	CO3	Develop basic communication skills through working in groups.
	CO4	Apply the various procedures and techniques for the experiments.

Course Outcomes Semester-II B.Sc (Chemistry)		
Subject with code		Course Outcomes
INORGANIC, ORGANIC & PHYSICAL CHEMISTRY BCHE201UDSC	CO1	The student will be able to relate different kind of chemical bonding and structure of various chemicals. They will be able to explain various bonding of a various groups.
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO3	Apply the various procedures and techniques for the experiments.



	CO4	To make students capable of understanding and studying nomenclature, classification of organic compounds and reactions.
MEDICINAL CHEMISTRY BCHE201USE	CO1	Student after learning this course can seek employment in areas of medical, pharmacy sector, Educational Institutes etc., As Junior Scientist, Assistant Professor, and a Researcher etc.
	CO2	Student will be able to relate different kind of drugs for standard their uses. They will be able to explain various types of anti-malarial drugs
	CO3	Develop basic communication skills through working in groups
	CO4	Apply the various procedures and techniques for the experiments
Course Outcomes Semester-III B.Sc (Chemistry)		
Subject with code		Course Outcomes
INORGANIC & ORGANIC CHEMISTRY BCHE301UDSC	CO1	To give the students a thorough knowledge of the different theories to explain the bonding in coordination compounds.
	CO2	To improve the level of understanding of the chemistry of organometallic compounds, metal carbonyls and metal clusters
	CO3	To give knowledge about some bioinorganic compounds.
	CO4	To develop interest among students in various branches of inorganic chemistry.
PHYSICAL CHEMISTRY BCHE302UDSC	CO1	Student after learning this course can be introduced about the basic postulates of quantum mechanics.
	CO2	Learn the measurement of viscosity by Ostwald-viscometer.
	CO3	Understand the concept of nuclear particle
	CO4	To understand the general characteristics of different states of matter.
ENVIRONMENTAL POLLUTION BCHE301USE	CO1	Student after learning this course can seek employment in areas of various pollution control board as Junior Scientist and Researcher etc.
	CO2	Student will be able to relate different kind of pollution controls
	CO3	Develop basic communication skills through working in groups
	CO4	Apply the various procedures and techniques for the experiments



Course Outcomes Semester-IV B.Sc (Chemistry)		
Subject with code		Course Outcomes
INORGANIC & ORGANIC CHEMISTRY BCHE401UDSC	CO1	To improve the level of understanding of the chemistry of organometallic compounds, metal carbonyls and metal clusters.
	CO2	To give the students a thorough knowledge of the different theories to explain the bonding in coordination compounds.
	CO3	To impart the students thorough idea in the chemistry of enzymes, amino acids, proteins and nucleic acids.
	CO4	To study the fundamentals of terpenoids, alkaloids, vitamins, lipids and steroids.
PHYSICAL CHEMISTRY & SPECTROSCOPY BCHE402UDSC	CO1	Student after learning this course can be introduced about the electro chemistry.
	CO2	Learn the types of conductometric titrations and to understand the concept of chromophore and auxochrome
	CO3	To impart a thorough knowledge of the fundamentals of microwave, infra-red, Raman, electronic, NMR, and ESR spectroscopy.
	CO4	To impart the students' concepts of the fundamentals of quantum mechanics and its applications in the study of structure of atoms, bonding in molecules and molecular spectroscopy
GREEN CHEMISTRY BCHE401USE	CO1	Student after learning this course can seek employment in areas of environmental protection, Educational Institutes etc. as Junior Scientist, Assistant Professor, Content Developer, and Researcher etc.
	CO2	Student will be able to relate different kind of green methods and laws for standard their uses. They will be able to explain various types of green methods
	CO3	Develop basic communication skills through working in groups
	CO4	Apply the various procedures and techniques for the experiments



Course Outcomes Semester-V B.Sc (Chemistry)		
Subject with code		Course Outcomes
INORGANIC CHEMISTRY BCHE501UDSC	CO1	Organometallic Chemistry is used extensively in the modern world, from the construction of polymers, plastics, and petrol, to electronic circuitry and solar panel construction, to advances in medicine such as immunization inoculations and chemotherapy.
	CO2	Student after learning this course can seek employment in areas of Metallurgy Firms, Hospitals, Educational Institutes etc as Junior Scientist, Assistant Professor, Content Developer, Process Engineer, Site Engineer, and Researcher etc.
	CO3	Candidates also hold the opportunity to explore the industrial, pharmaceutical, technological and commercial fields of chemistry as the course.
ORGANIC CHEMISTRY BCHE502UDSC	CO1	This course gives the student idea about the Nucleophilic Substitution.
	CO2	This is related to saturated carbon atom.
	CO3	It has a broad decryption about Sucrose and Maltose.
	CO4	This course gives the student brief information about Isoprenoids.
	CO5	In the Stereochemistry students know about Conformational analysis of some organic compounds.
PHYSICAL CHEMISTRY BCHE503UDSC	CO1	Student after learning this course can be introduced about the fundamentals of statistical thermodynamics.
	CO2	Learn the polymerization reaction with examples.
	CO3	Understand the Chemical Cell: Without Transference with Transference.
	CO4	Study the physical chemistry of macromolecules.
ANALYTICAL CHEMISTRY BCHE504UDSC	CO1	Student after learning this course can seek employment in areas of Agriculture, farms, Educational Institutes etc. as Junior Scientist, Assistant Professor, Content Developer, and Researcher etc.
	CO2	The student will be able to relate different kind of spectroscopy studies and symmetry classification of various chemicals. They will be able to explain acid-base titration of a various groups.



	CO3	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO4	Apply the various procedures and techniques for the experiments.
SYNTHETIC DYES BCHE501USE	CO1	Student after learning this course can be introduced about the Dyes & its Classification
	CO2	Learn the difference between Dyes and Pigments
	CO3	Understand the Chromospheres and Chromogens
	CO4	Study the dye Synthesis & it's uses

Course Outcomes Semester-VI B.Sc (Chemistry)		
Subject with code		Course Outcomes
INORGANIC CHEMISTRY BCHE601UDSC	CO1	To develop interest among students in various branches of inorganic chemistry.
	CO2	To impart essential theoretical knowledge on atomic structure, periodic properties and chemical bonding.
	CO3	This will give the students a basic understanding of nuclear chemistry, Bioinorganic Compounds.
	CO4	This paper also gives elementary ideas on metal complexes.
ORGANIC CHEMISTRY BCHE602UDSC	CO1	To study the fundamentals of terpenoids, alkaloids, vitamins, lipids and steroids.
	CO2	To impart the student's thorough idea in the chemistry of enzymes, amino acids, proteins and nucleic acids.
	CO3	To have an elementary idea of supramolecular chemistry.
	CO4	Identification of organic compounds using spectroscopy.
PHYSICAL CHEMISTRY BCHE603UDSC	CO1	Student after learning this course can be introduced about the thermal and photochemical reactions and its difference, absorption.
	CO2	Learn the Nernst heat theorem.
	CO3	Understand the Concept of activation energy.
	CO4	To derive some thermochemical equations and kinetic equations. To study phase diagrams and elementary idea of



		catalysis.
ANALYTICAL CHEMISTRY BCHE604UDSC	CO1	Student after learning this course can seek employment in areas of Agriculture, farms, Educational Institutes etc. as Junior Scientist, Assistant Professor, and Researcher etc.
	CO2	The student will be able to relate different kind of spectroscopy studies and symmetry classification of various chemicals. They will be able to explain acid-base titration of a various groups
	CO3	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO4	Apply the various procedures and techniques for the experiments.
POLYMER CHEMISTRY BCHE601USE	CO1	Student after learning this course can be introduced about the Polymerization techniques
	CO2	Learn the Mechanism and Kinetics of polycondensation
	CO3	Understand the Concept of Averages
	CO4	Study the theories of Polydispersity and molecular weight distribution



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Bachelor of Science (B.Sc.) Botany
Batch 2018-21
Program Outcome (PO)



PO No.	Program Outcome Description
PO1	Foundational Knowledge: Graduates will possess a strong foundation in the fundamental concepts, theories, and principles of their chosen discipline, as per the prescribed curriculum.
PO2	Practical Skills: Students will acquire practical skills relevant to their field, including laboratory techniques, data collection, analysis, and interpretation.
PO3	Critical Thinking: Graduates will develop critical thinking skills to analyze, evaluate, and solve scientific problems, applying logical reasoning and evidence-based approaches.
PO4	Effective Communication: Students will demonstrate effective communication skills, both orally and in writing, to convey scientific ideas and findings to different audiences.
PO5	Collaboration and Teamwork: Graduates will work collaboratively in teams, engaging in effective communication, cooperation, and coordination to accomplish shared objectives.
PO6	Information Literacy: Students will develop information literacy skills to access, evaluate, and utilize scientific information from diverse sources, including digital resources.
PO7	Ethical Awareness: Graduates will demonstrate ethical awareness and responsibility in scientific practice, understanding the importance of integrity, honesty, and ethical conduct.
PO8	Lifelong Learning: Students will develop a commitment to lifelong learning, staying updated with advancements in their field and engaging in continuous professional development.
PO9	Societal Impact: Graduates will recognize the social and ethical implications of scientific knowledge and contribute positively to society through their discipline.



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Bachelor of Science (B.Sc.) Botany
Batch 2018-21
Program Specific Outcome (PSO)



PSO No.	Program Specific Outcome Description
PSO1	Botanical Knowledge and Diversity: Graduates of the B.Sc. Botany program will develop a comprehensive understanding of plant biology, including plant anatomy, physiology, taxonomy, and ecology. They will be able to identify and classify diverse plant species.
PSO2	Plant Conservation and Sustainable Practices: Graduates will demonstrate an understanding of plant conservation principles and possess skills to manage and protect plant ecosystems. They will promote sustainable practices, contribute to biodiversity conservation, and raise awareness about the importance of plant conservation.



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Bachelor of Science (B.Sc.) Botany
Batch 2018-21
Course Outcome (COs)



Students of all undergraduate B.Sc Degree program at the time of Graduation will be able to learn:

Course Outcome of Semester I (B. Sc)		
Subject With Code	Co No.	Course Outcome
Microbiology & Microanatomy(MBMA) (BBOT101DSC)	CO1	students will gain an understanding about viruses and bacteria and its structure
	CO2	to learn the morphology of angiosperm plants
	CO3	to learn the different tissue , organ and secondary growth of Plants

Course Outcome of Semester II (B. Sc)		
Subject With Code	Co No.	Course Outcome
GENOME AND PHANEROGAMS (GEPS) (BBOT201DSC)	CO1	students will gain an understanding about cell and its structure and function.
	CO2	To learn about general characters, reproduction and economic importance of phanerogams
	CO3	to learn the genetics and mendelian genetics and gene interactions



Course Outcome of Semester III (B. Sc)		
Subject With Code	Co No.	Course Outcome
Palaeobotany, Plants and Human welfare and Environmental Biology (BBOT301DSC)	CO1	students will gain an understanding about fossil and fossil of gymnosperms and pteridophytes
	CO2	To learn about Cereals Pulses Nuts Vegetables Fruits Spice Beverage and importance of them
	CO3	students will gain an understanding between , Plants and Human welfare
Genetics, Plant Ecology and Plant Physiology (BBOT302DSC)	CO1	students will gain an understanding about crossing over and linkage and quantitative genetics.
	CO2	To learn about different types of ecological adaptations
	CO3	Students will able to know about the physiological activity of plants
Biodiversity (BBOT302SE)	CO1	The students understands the concept of Reflect upon the values Biodiversity.
	CO2	The students understands uses of Biodiversity.
	CO3	The students Develop their understanding on commonly occurring Biodiversity.



Course Outcome of Semester IV (B. Sc)		
Subject With Code	Co No.	Course Outcome
Embryology, Taxonomy and Anatomy (BBOT401DSC)	CO1	students will gain an understanding about different type of tissue and its structure and growth
	CO2	Examine the endosperm, anther, pollen of flower
	CO3	to learn the families of plants species
Bio Statistics, Bio Chemistry and Bio-Physics (BBOT402DSC)	CO1	Students will gain an understanding about structure and functions of carbohydrate, lipid, amino acid and proteins
	CO2	Examine the endosperm, anther, pollen of flower
	CO3	To learn the chemical bonds pH and buffers
DNA-A MOLECULE OF LIFE (BBOT401SE)	CO1	The students understand the concept of Reflect upon the values DNA Molecule.
	CO2	The students understand uses of DNA.
	CO3	The students Develop their understanding on commonly occurring DNA.

Course Outcome of Semester V (B. Sc)



Subject With Code	Co No.	Course Outcome
Algae, Fungi and Plant Pathology (BBOT501DSC)	CO1	Identify true fungi and demonstrate the principles and application of plant pathology in the control of plant disease
	CO2	Demonstrate skills in laboratory, field and glasshouse work related to mycology
	CO3	Demonstrate skills in laboratory, field and glasshouse work related to plant pathology
	CO4	Develop an understanding of microbes, fungi appreciate their adaptive strategies
	CO5	Identify the common plant diseases according to geographical locations and device control measures
Bryophyta, Pteridophyta and Gymnosperms (BBOT502DSC)	CO1	The student understands of archegoniate, Bryophytes, Pteridophytes and Gymnosperms
	CO2	The student Demonstrate an understanding of archegoniate, Bryophytes, Pteridophytes and Gymnosperms
	CO3	Understanding of plant evolution and their transition to land habitat.
	CO4	Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Bryophytes, Pteridophytes, Gymnosperms
	CO5	Know about the structure , life history and economic importance of some plant of Bryophytes, Pteridophytes, Gymnosperms
Angiosperm Families, Plant Ecology and Plant Anatomy (BBOT503DSC)	CO1	The student understands the concept of important results on understand core concepts of biotic and abiotic
	CO2	Classify the soils on the basis of physical, chemical and biological components Assess the adaptation of plants in relation to light, temperature, water, wind and fire.
	CO3	Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium. Evaluate the Important herbaria and botanical gardens.
	CO4	Interpret the rules of ICN in botanical nomenclature. Generalize the characters of the families according to Bentham & Hooker's system of classification.
	CO5	examine the internal anatomy of plant systems and organs. Develop critical understanding on the evolution of concept of organization of shoot and root apex. Analyze the composition of different parts of plants and their relationships. Evaluate the adaptive and protective systems of plants
Cell Biology & Genetics, Microbiology	CO1	The student understands the concept of Have conceptual understanding of Chromosomal Aberrations ,genetic



and Biostatistics (BBOT504DSC)	CO2	Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes leading to genetic disorders.
	CO3	Analyze the effect of mutations on gene functions and dosage. Examine the structure, function and replication of DNA.
	CO4	Develop understanding on the concept of microbial nutrition
	CO5	Increase the awareness and appreciation of human friendly viruses and bacteria their economic importance
Air Pollution (BBOT501SE)	CO1	The student understands the concept of Understand the fundamental issues of environment . .
	CO2	Analyze different sources of environmental problems
	CO3	Analyze different methods of measurement of pollution



Course Outcome of Semester VI (B. Sc)		
Subject With Code	Co No.	Course Outcome
Molecular Biology, Plant Pathology & Lichens and Angiosperm Families (BBOT601DSC)	CO1	The student understands the concept of Identify the principles and application of plant pathology in the control of plant disease, differentiate the main types of prokaryotes through their grouping abilities and their characteristic.
	CO2	Acquaintance with various laboratory equipment and their uses in plant pathology
	CO3	Evaluate the experiments establishing central dogma and genetic code
	CO4	Gain an understanding of various steps in transcription, protein synthesis and protein modification
	CO5	Generalize the characters of the families according to Bentham & Hooker's system of classification.
Biochemistry and Plant Physiology (BBOT602DSC)	CO1	The student understands the concept of Comprehend different fundamental concepts related to plant biochemistry like plant cell organelles, photosynthesis, respiration and lipid metabolism etc.
	CO2	The student Analyze the structure and properties of various enzymes
	CO3	The student Evaluate the process of ATP Synthesis, nitrogen metabolism and lipid metabolism
	CO4	The student Explain chemical properties and deficiency symptoms in plants. Classify aerobic and anaerobic respiration
	CO5	The student Explain the significance of Photosynthesis and respiration. Assess dormancy and germination in plants
Economic Botany, Plant Tissue Culture & Biotechnology and Genetics&Plant Ecology (BBOT603DSC)	CO1	The student understands the concept of Understand the core concepts and fundamentals of plant biotechnology and genetic engineering.
	CO2	The student Develop their competency on different types of plant tissue culture.
	CO3	The student understands Critically analyze the major concerns and applications of transgenic technology.
	CO4	The student is able to Analyze the enzymes and vectors for genetic manipulations.
	CO5	The student Examine gene cloning and evaluate different methods of gene transfer.
Plant Anatomy and Plant Breeding (BBOT604DSC)	CO1	The students Gain knowledge about basic Familiarize with genetic basis of heterosis.
	CO2	The students Classify Sexual and Asexual modes of reproduction. Explain monogenic and polygenic inheritance. Reflect upon the role of various non- conventional methods used in crop improvement.



	CO3	The students examine the internal anatomy of plant systems and organs.
	CO4	The students Develop critical understanding on the evolution of concept of organization of shoot and root apex
	CO5	The students Analyze the composition of different parts of plants and their relationships. Evaluate the adaptive and protective systems of plants
Fresh Water Ecology (BBOT601SE)	CO1	The students understands the concept of Reflect upon the values Fresh water
	CO2	The students understands uses of aquatic plans
	CO3	The students Develop their understanding on commonly occurring marine planktons of Indian coasts along with the current understanding of its biology.



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M.Sc.

Master of Science (M.Sc.) Zoology
Batch 2018-21
Program Outcome (PO)

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-
- Students of all Post graduate Zoology Degree Programs at the time of graduation will be able to learn

Master of Science Program outcomes (PO)

PO. Program Outcome Description

- PO1** Advanced Subject Knowledge: Graduates will demonstrate advanced knowledge and expertise in their specialized field, including a comprehensive understanding of advanced concepts and theories.
- PO2** Research Proficiency: Students will develop advanced research skills, including the ability to design and conduct independent research, analyze data, and draw meaningful conclusions.
- PO3** Critical Analysis and Synthesis: Graduates will demonstrate advanced critical thinking abilities, the capacity to analyze complex scientific problems, synthesize information from diverse sources, and propose innovative solutions.
- PO4** Scholarly Communication: Students will possess advanced skills in scientific writing, oral presentation, and effective communication of research findings to scientific and non-scientific audiences.
- PO5** Independent Thinking: Graduates will exhibit independent thinking and creativity in problem-solving, research design, and the development of novel approaches in their field of specialization.
- PO6** Leadership and Collaboration: Students will develop leadership skills and the ability to collaborate effectively with diverse teams, providing guidance and fostering a collaborative research environment.
- PO7** Advanced Technology and Techniques: Graduates will be proficient in utilizing advanced technology, tools, and techniques specific to their discipline to enhance research and analysis capabilities.
- PO8** Ethical Research Practices: Students will adhere to high ethical standards in research, ensuring the responsible conduct of research, integrity, and respect for intellectual property rights.
- PO9** Continuous Learning and Adaptability: Graduates will demonstrate a commitment to continuous learning, keeping pace with emerging trends and technologies, and adapting to new challenges in their field.
- PO10** Contribution to the Field: Students will make significant contributions to their specialized field, actively participating in conferences, publishing research, and advancing scientific knowledge through their research work.



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M.Sc.

Master of Science (M.Sc.) Zoology
Batch 2018-21
Program Specific Outcome (PSO)

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Master of Science Program specific outcomes (PSO)

PSO. Program Specific Outcome Description

- PSO1** Advanced Zoological Knowledge and Research: Graduates of the M.Sc. Zoology program will acquire advanced knowledge and expertise in the study of animal biology, including animal behavior, ecology, physiology, and evolution. They will engage in advanced research, investigating specialized areas within zoological science.
- PSO2** Wildlife Conservation and Management: Graduates will contribute to wildlife conservation efforts, developing strategies for the conservation and sustainable management of animal species and habitats. They will apply advanced techniques and technologies to study animal populations, behavior, and ecosystem dynamics.



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M.Sc.

Master of Science (M.Sc.) Zoology
Batch 2018-21
Course Outcome (COs)

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- Students of all Post graduate Zoology Degree Programs at the time of graduation will be able to learn

Course Outcome Semester -I M.Sc. (Zoology)		
Subject with code		Course Outcome
CELL STRUCTURE AND FUNCTIONS MZOO101UDSC	CO1	In this concept of cell structure students will understand structure and furcation of plasma membrane. And structural organization and also understand function of intracellular organelles.
	CO2	In this concept of cell structure students will understand structure and furcation of nucleus and DNA
	CO3	In this concept of cell structure students will understand Cell Division and Cell Cycle and Cell Signaling also understand cellular commutation
	CO4	In this concept of cell structure students will understand basic introduction to cancer biology and cancer treatment
EVOLUTIONARY BIOLOGY AND DIVERSITY MZOO102DSC	CO1	In this concept of cell structure students will understand importance of evolution in biology and the development of evolutionary theory (Lamarckism, Darwinism natural selection, Neo-Darwinism and mutation)
	CO2	In this concept of cell structure students will understand genetic drift and recombination and gene flow.
	CO3	In this concept of cell structure students will understand genetics and species and ecosystem diversity and biodiversity at



		global and national level and also biogeographic classification.
	CO4	In this concept of cell structure students will understand national park and wildlife sanctuaries and biosphere reserves and also threats to biodiversity and endangered and endemic species of India.
MOLECULAR BIOLOGY AND GENETICS MZOO103UDSC	CO1	In this concept of Molecular Biology students will understand Lear about nucleic acid principles, including composition and synthesis. and molecular organization and type of DNA & RNA also transcription in prokaryotes and eukaryotes
	CO2	In this concept of Molecular Biology students will understand regulation gene and recombinant DNA technology classification of enzymes gene cloning
	CO3	In this concept of Molecular Biology students will understand gene structure and expression and gene code also molecular basic of gene mutations
	CO4	In this concept of Molecular Biology students will understand spontaneous and induced mutation and physical and chemical mutagens also factor affecting gene frequency
ANIMAL TAXONOMY I MZOO104UDSC	CO1	In this concept of Animal Taxonomy students will understand After thorough understanding of the content student will be able to explain: Gain a deep understanding of animal body complexity, organization, and body plans.
	CO2	In this concept of Animal Taxonomy students will understand history and



		classification and characteristic and diversity of protozoan also species concept
	CO3	In this concept of Animal Taxonomy students will understand classification and characteristic and diversity of (porifera, cnidaria, Platyhelminthes, Nematoda)
	CO4	In this concept of Animal Taxonomy students will understand characteristic of subphylum and urochordates also cephalochordates
WILDLIFE AND CONSERVATION BIOLOGY MZOO105USE	CO1	Understanding of Wildlife: Define wildlife, its scope, and recognize it as a vital natural resource for ecological balance and human sustenance.
	CO2	Conservation Awareness: Comprehend the historical context and various types of conservation efforts, highlighting the significance of wildlife preservation.
	CO3	Indian Subcontinent Wildlife: Identify wildlife habitats in the Indian subcontinent and their significance in global biodiversity.
	CO4	Wildlife Management and Protection: Trace the evolution of wildlife management, appreciate current advances, and acknowledge the pivotal role of protected areas and community engagement in wildlife conservation, with a focus on contemporary practices in India.



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Course Outcome Semester -II M.Sc. (Zoology)		
Subject with code		Course Outcome
Biochemistry MZOO201DSC	CO1	Understand the fundamental chemical bonds and interactions in biochemistry, including Van der Waals, electrostatic, hydrogen bonding, and hydrophobic interactions.
	CO2	Gain knowledge of key concepts such as water's role in weak interactions, ionization, pH, and buffering in biological systems.
	CO3	Explore biomolecules like carbohydrates and lipids, their structures, functions, and metabolism pathways.
	CO4	Comprehend the significance of enzymes, their classification, mechanisms, kinetics, and regulation, as well as the role of vitamins in maintaining biochemical processes and preventing deficiency diseases.
	CO1	Proficiency in operating laboratory instruments and executing techniques crucial for scientific research and experimentation.
	CO2	Capability to perform precise biomolecule separation and analysis through



INSTRUMENTATION AND ANALYTICAL TECHNIQUES MZOO202DSC		chromatographic and electrophoretic methods.
	CO3	Competence in utilizing spectroscopic and microscopic techniques to explore molecular and cellular structures.
	CO4	Profound understanding and practical application of immunoassays, flow cytometry, and radio isotopic techniques for molecular detection and quantification, empowering students for careers in biotechnology and life sciences.
BIOSTATISTICS AND RESEARCH METHODOLOGY MZOO203DSC	CO1	Proficiency in applying statistical methods to analyze biological data, enabling evidence-based decision-making in research.
	CO2	Competence in designing and conducting scientifically rigorous experiments and surveys, enhancing the quality of research outcomes.
	CO3	Effective scientific communication skills, including writing research proposals and papers, facilitating successful publication and dissemination of research findings.
	CO4	Familiarity with the principles of research methodology and ethical practices, equipping students to contribute meaningfully to the field of biological sciences.
	CO1	Develop a comprehensive understanding of the classification, characteristics, and diversity of non-chordates and vertebrates, facilitating in-depth knowledge of animal biology.



ANIMAL TAXONOMY -2 MZOO204DSC	CO2	Gain insights into the structural and functional adaptations of various animal classes, enabling an appreciation of their ecological roles and evolutionary history.
	CO3	Acquire practical skills in zoological taxonomy, including DNA barcoding and specimen handling, essential for biological research and species identification.
	CO4	Prepare students for advanced studies and careers in fields such as zoology, ecology, and wildlife biology by building a strong foundation in animal biology and taxonomy.
WILDLIFE BIOLOGY – 2 MZOO206SE	CO1	Proficiency in employing advanced techniques to estimate wildlife populations and assess their habitat use, contributing to evidence-based wildlife management.
	CO2	Competence in addressing human-wildlife conflicts through effective management and conservation outreach, ensuring coexistence and biodiversity preservation.
	CO3	Acquiring practical skills in wildlife immobilization and rescue, facilitating hands-on intervention for wildlife welfare and conservation.
	CO4	Preparedness for impactful careers in wildlife conservation, research, and management, equipped with a comprehensive understanding of wildlife assessment and conflict resolution.



Course Outcome Semester -III MSc. (Zoology)		
Subject with code		Course Outcome
Animal Physiology MZOO301DSC	CO1	Proficiency in understanding and explaining the complex physiological processes governing digestion, respiration, circulation, and sensory mechanisms.
	CO2	Ability to analyze and recognize common physiological disorders, facilitating early diagnosis and intervention.
	CO3	Knowledge of the anatomical and functional aspects of the urino-genital and thermoregulatory systems, contributing to a holistic understanding of human physiology.
	CO4	Preparedness for careers in healthcare, medicine, and life sciences, with a strong foundation in human physiology and its practical applications.
Immunology and Endocrinology MZOO302DSC	CO1	Proficiency in comprehending the immune system's intricate workings, from innate and adaptive immunity to antigen recognition.
	CO2	Ability to analyze and interpret immune responses, including immune receptor signaling and regulation.
	CO3	Knowledge of immunological disorders, infectious diseases, allergies, and autoimmune conditions, facilitating their diagnosis and treatment
	CO4	Preparedness for careers in immunology, research, vaccine development, and



		healthcare, with a strong foundation in immune system dynamics and applications.
Developmental Biology and Evolution MZOO303DSC	CO1	Gain a profound understanding of developmental biology, from gametogenesis and early embryonic processes to organogenesis and regeneration in animals.
	CO2	Explore the principles and evidence of evolution, including key experiments like the Miller-Urey and Oparin-Haldane hypotheses.
	CO3	Comprehend genetic concepts related to evolution, such as gene pools, genetic drift, and speciation.
	CO4	Acquire knowledge of human evolution and the evolutionary history of diverse faunal groups, providing a well-rounded perspective on the science of life's development and diversification.
Advance Techniques in Zoology MZOO304DSC	CO1	Proficiency in diverse techniques for assessing biodiversity, from field-based surveys to phylogenetic DNA analysis, facilitating comprehensive ecological research.
	CO2	Competence in remote sensing and GIS applications, enabling students to analyze spatial data and contribute to land use planning and ecological modeling.
	CO3	Ability to apply GIS tools to address environmental challenges, including species distribution modeling and fragmentation analysis.



	CO4	Preparedness for careers in conservation, ecology, and environmental science, with practical skills and expertise in biodiversity assessment and spatial data analysis.
Wildlife Biology- 3 MZOO306SE	CO1	Proficiency in employing both conventional and advanced research and monitoring techniques for wildlife biology, enabling comprehensive data collection and species conservation.
	CO2	Competence in camera trapping, radio telemetry, and noninvasive genetics, providing practical skills for studying wildlife and contributing to conservation efforts.
	CO3	Ability to apply information technology and citizen science approaches in wildlife research, fostering innovative solutions for wildlife monitoring and protection.
	CO4	Preparedness for careers in wildlife biology, conservation, and research, with a strong foundation in contemporary techniques and methodologies.



Course Outcome Semester -IV MSc. (Zoology)		
Subject with code		Course Outcome
Histology, Histochemistry and Parasitology MZOO401DSC	CO1	In this concept of Histology students will understand the basic introduction of Histochemistry and tissue processing and also understand different strain method.
	CO2	In this concept of Histology students will understand the basic introduction of body tissue and histology of bones and cartilage and also different type of digestive tissue.
	CO3	In this concept of Parasitology students will understand the specific human parasites and the diseases they cause. Emphasis is placed throughout on the basic biology of the pathogens and their host-parasite relationships.
	CO4	In this concept of Parasitology students will understand with the structure and classification of parasites and the mechanisms of parasitic diseases.
Animal Behavior MZOO402DSC	CO1	In this concept of animal behavior students will understand the basic introduction of history of animal behavior different approaches and methods of animal behavior
	CO2	In this concept of animal behavior students will understand the different types of animal behaviour.
	CO3	In this concept of animal behavior students will understand the behavioral ecology and social behaviour.
	CO4	In this concept of animal behavior students will understand the physiology of animal



		behavior including pheromones in animal behavior and hormones in animal behavior also biological clocks.
Toxicology and Environmental Biology MZOO403DSC	CO1	In this concept of toxicology students will understand brief history of toxicology classification of toxic agents and characteristics of exposure toxicants.
	CO2	In this concept of toxicology students will understand different dose response relationship in toxicology.
	CO3	In this concept of toxicology students will understand different types of environmental pollution.
	CO4	In this concept of toxicology students will understand different environmental change and environmental impact assessment.
Entomology MZOO404DSC	CO1	In this concept of Entomology students will understand basic introduction and general characters & classification of insect also understand of external morphology of insect
	CO2	In this concept of Entomology students will get understand of internal morphology of insect (Grasshopper).
	CO3	In this concept of Entomology students will get understand of physiology of an insect.
	CO4	In this concept of Entomology students will get understand of applied entomology.
	CO1	In this concept of wildlife biology students will get understand of different type of act (Indian wildlife protection act, forest act, national biodiversity act).



Wildlife Biology- 4 MZOO406SE	CO2	Students will learn about importance of law and regulations in wildlife conservation.
	CO3	In this concept of wildlife biology students will get understand of different type of organization (IUCN, CITIES, TRAFFIC).
	CO4	Students will learn about different type of Wildlife crime: case study.



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Master of Science (M.Sc.) Botany

Batch 2018-21

Program Outcome (PO)



Students of all undergraduate M.Sc. degree Programs at the time of graduation will be able to learn:

- PO1: Advanced Subject Knowledge: Graduates will demonstrate advanced knowledge and expertise in their specialized field, including a comprehensive understanding of advanced concepts and theories.
- PO2: Research Proficiency: Students will develop advanced research skills, including the ability to design and conduct independent research, analyze data, and draw meaningful conclusions.
- PO3: Critical Analysis and Synthesis: Graduates will demonstrate advanced critical thinking abilities, the capacity to analyze complex scientific problems, synthesize information from diverse sources, and propose innovative solutions.
- PO4: Scholarly Communication: Students will possess advanced skills in scientific writing, oral presentation, and effective communication of research findings to scientific and non-scientific audiences.
- PO5: Independent Thinking: Graduates will exhibit independent thinking and creativity in problem-solving, research design, and the development of novel approaches in their field of specialization.
- PO6: Leadership and Collaboration: Students will develop leadership skills and the ability to collaborate effectively with diverse teams, providing guidance and fostering a collaborative research environment.
- PO7: Advanced Technology and Techniques: Graduates will be proficient in utilizing advanced technology, tools, and techniques specific to their discipline to enhance research and analysis capabilities.
- PO8: Ethical Research Practices: Students will adhere to high ethical standards in research, ensuring the responsible conduct of research, integrity, and respect for intellectual property rights.
- PO9: Continuous Learning and Adaptability: Graduates will demonstrate a commitment to continuous learning, keeping pace with emerging trends and technologies, and adapting to new challenges in their field.
- PO10: Contribution to the Field: Students will make significant contributions to their specialized field, actively participating in conferences, publishing research, and advancing scientific knowledge through their research work.



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Master of Science (M.Sc.) Botany
Batch 2018-21
Program Specific Outcome (PSO)



Students after completion of graduation in degree Science program able to:

- PSO1: Advanced Botanical Knowledge and Research:** Graduates of the M.Sc. Botany program will acquire advanced knowledge and expertise in the field of plant biology, including plant physiology, genetics, ecology, and biodiversity. They will engage in advanced research, exploring specialized areas of botanical study.
- PSO2: Plant Conservation and Ecological Restoration:** Graduates will contribute to plant conservation efforts, developing strategies for the preservation and restoration of plant species and ecosystems. They will apply advanced techniques and technologies to assess plant diversity, monitor ecological changes, and promote sustainable management practices.



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Master of Science (M.Sc.) Botany

Batch 2018-21

Course Outcome (COs)



Students of all undergraduate M.Sc. degree programs at the time of graduation will be able to learn:

Course Outcomes Semester-I		
Subject with code		Course Outcome
MICROBIOLOGY, PHYCOLOGY AND MYCOLOGY MBOT101DSC	CO1	Identify and explain the general characteristics of bacteria, including their morphology, structure, and classification.
	CO2	Outline the general characteristics of algae and classify them based on their thallus organization.
	CO3	Analyze the cell structure, organization, and nutritional strategies of fungi
BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PATHOLY (BPGP) MBOT102DSC	CO1	Introduction to plant diseases, understanding their impact on crops and ecosystems.
	CO2	Examination of symptoms, identification of causal organisms, understanding disease cycles, and implementation of control measures
PLANT ANATOMY AND ECOLOGY (PAE) MBOT103DSC	CO1	Examines various plant structures systematically, including trichomes, stomata, leaf anatomy, nodal anatomy, cellular contents, wood anatomy, and flower anatomy.
	CO2	Examination of the different tissue of plant and plant anatomy.
CELL BIOLOGY AND GENETICS MBBOT104DSC	CO1	Examines various types of cell and cell organelles.
	CO2	To learn about extra chromosomal inheritance.
	CO3	Examination of the different mutation and genetic mapping

Course Outcomes Semester – II		
Subject with code		Course Outcome
TAXONOMY AND DIVERSITY OF PLANTS MBOT201DSC	CO1	Students will gain an understanding of the pre and post Darwinian classification system, specifically focusing on the form relationship as



		proposed by Bentham and Hooker.
	CO2	Examination of symptoms, identification of plants and its family
PLANT METABOLISM MBOT202DSC	CO1	Understanding the physiological effects and mechanisms of action of various plant hormones.
	CO2	Examination of c3, c4 cam cycles and metabolism of lipid, nitrogen and sulphur.
	CO3	Exploring photoperiodism and its significance in flowering
BIOPHYSICS,INSTRUMENTATION AND BIOCHEMISRY MBOT203DSC	CO1	Exploring the occurrence, classification, structure, and function of lipids, carbohydrate and amino acids.
	CO2	Examine the pH of different material.
	CO3	Study of different law.
PLANT RESOURCE UTILIZATION,CONSERVATION AND BIOMETRY(PRC) MBOT204DSC	CO1	Examine the different plant species and their economic importance.
	CO2	Examine the adultration in foods.

Course Outcomes Semester – III		
Subject with code		Course Outcome
REPRODUCTIVE BIOLOGY OF FLOWERING PLANTS MBOT301DSC	CO1	Students will gain an understanding about pollination and embryogenesis.
	CO2	Examine structure of the anther, pollen and ovules
	CO3	To learn the embryology and its relations with different branches of botany
	CO4	To learn the different tissue, organ and secondary growth of Plants
MOLECULAR BIOLOGY AND BIOTECHNOLOGY MBOT302DSC	CO1	Students will gain an understanding about RNA and DNA
	CO2	Examine structure of the Translation and fine structure of gene
	CO3	To learn the recombinant DNA technology



MICROSCOPY,FOSSILES AND MICROBIOLOGY MBOT303DSC	CO1	Students will gain an understanding about laminar air, autoclave, etc...
	CO2	Examine structure of the fossil and the process of fossilization
BIOSTATISTICS AND PLANT PHYSIOLOGY MBOT304DSC	CO1	Students will gain an understanding about Probability, mean and basic of biostatistics
	CO2	Examine the seed germination and seed dormancy, and basic concept of PCD
	CO3	Students will gain an understanding about macro-micro nutrients and its transport mechanism and different type of stress effect on plants

Course Outcomes Semester – IV		
Subject with code		Course Outcome
PLANT BREEDING AND HORTICULTURE MBOT401DSC	CO1	Student will understand about plant breeding and its principles, bioethics and biosafety.
	CO2	Get outline of basic of horticultures.
	CO3	Analyze the gardening, landscaping and green house and its principles.
MYCORRHIZAE, MUSHROOMS,ETHENOBOTANY AND PLANT GEOGRAPHY MBOT402DSC	CO1	Identify and explain the introduction of mycorrhizae and different type of mushrooms
	CO2	Student will understand about ethno botany and study about medico-ethno-botanically important plants
	CO3	Analyze the Importance of phytogeography and forest and land flora of Gujarat.



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COURSE OUTCOME

FACULTY OF SCIENCE



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Master of Science (M.Sc.) Chemistry
Batch 2018-21
Program Outcome (PO)



Master of Science Program outcomes (PO)

PO No.	Program Outcome Description
PO1	Advanced Subject Knowledge: Graduates will demonstrate advanced knowledge and expertise in their specialized field, including a comprehensive understanding of advanced concepts and theories.
PO2	Research Proficiency: Students will develop advanced research skills, including the ability to design and conduct independent research, analyze data, and draw meaningful conclusions.
PO3	Critical Analysis and Synthesis: Graduates will demonstrate advanced critical thinking abilities, the capacity to analyze complex scientific problems, synthesize information from diverse sources, and propose innovative solutions.
PO4	Scholarly Communication: Students will possess advanced skills in scientific writing, oral presentation, and effective communication of research findings to scientific and non-scientific audiences.
PO5	Independent Thinking: Graduates will exhibit independent thinking and creativity in problem-solving, research design, and the development of novel approaches in their field of specialization.
PO6	Leadership and Collaboration: Students will develop leadership skills and the ability to collaborate effectively with diverse teams, providing guidance and fostering a collaborative research environment.
PO7	Advanced Technology and Techniques: Graduates will be proficient in utilizing advanced technology, tools, and techniques specific to their discipline to enhance research and analysis capabilities.
PO8	Ethical Research Practices: Students will adhere to high ethical standards in research, ensuring the responsible conduct of research, integrity, and respect for intellectual property rights.
PO9	Continuous Learning and Adaptability: Graduates will demonstrate a commitment to continuous learning, keeping pace with emerging trends and technologies, and adapting to new challenges in their field.
PO10	Contribution to the Field: Students will make significant contributions to their specialized field, actively participating in conferences, publishing research, and advancing scientific knowledge through their research work.



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Master of Science (M.Sc.) Chemistry
Batch 2018-21
Program Specific Outcome (PSO)



Master of Science Program specific outcomes (PSO)

M.Sc. Chemistry:

PSO No.	Program Specific Outcome Description
PSO1	Advanced Chemical Knowledge and Applications: Graduates of the M.Sc. Chemistry program will acquire advanced knowledge and expertise in the principles and theories of chemistry. They will apply this knowledge to solve complex chemical problems, conduct independent research, and contribute to advancements in chemical science.
PSO2	Advanced Laboratory Skills and Instrumentation: Graduates will possess advanced laboratory skills, including sophisticated instrumentation techniques and data analysis methods. They will demonstrate proficiency in designing and conducting experiments, synthesizing new compounds, and characterizing chemical structures.



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Master of Science (M.Sc.) Chemistry
Batch 2018-21
Course Outcome (COs)



Student of all graduate science degree programs at the time of master will be able to learn.

Course Outcome Semester- I M.Sc.		
Subject with Code		Course Outcome
INORGANIC CHEMISTRY MCHE101DSC	CO1	Student after learning this course can seek employment in areas of Metallurgy Firms, Hospitals, Educational Institutes etc. as Junior Scientist, Assistant Professor, Content Developer, Process Engineer, Site Engineer, and Researcher etc.
	CO2	This course opens a wide range of job opportunities such as in research, development, or production in the chemical process industries or to undertake research or teaching certificates.
	CO3	Candidates also hold the opportunity to explore the industrial, pharmaceutical, technological and commercial fields of chemistry as the course basically concentrates on the uses of chemistry in modern society.
	CO4	The employment areas of Inorganic Chemistry include Chemicals Manufacturing Companies, Industrial Laboratories, Medical Research, Oil Industry etc.
ORGANIC CHEMISTRY MCHE102DSC	CO1	Apply the concepts of bonding, resonance, aromaticity, hyperconjugation and tautomerism to higher organic compounds.
	CO2	Predict the products, identify reaction intermediates and propose suitable mechanism for organic reactions
	CO3	Identify stereo genic centers, recognize enantiomers, diastereomers, meso compounds, draw stereochemical structures, and provide R/S



		designations of stereocenters
	CO4	Draw stable conformations for substituted cyclic compounds, fused and bridged rings.
PHYSICAL CHEMISTRY MCHE103DSC	CO1	Student after learning this course can be introduced about the Huckel theory of conjugated systems.
	CO2	Learn the calculation of scotty and Frenkel defects using statistical method.
	CO3	Understand the Nernst heat theorem and its applications to gaseous system.
	CO4	Study the fast reactions by flow method, relaxation method, flash photolysis and nuclear magnetic resonance method.
ANALYTICAL CHEMISTRY MCHE104DSC	CO1	Organize, analyze and interpret data using the tools learned in an ethically responsible approach and present it systematically.
	CO2	Describe and adopt suitable separation techniques.
	CO3	Interpret data obtained from optical and thermal methods of chemical analysis.
SPECTROSCOPY & DIFFRACTION METHOD MCHE101SE	CO1	This course opens a wide range of job opportunities such as in research, development, or production in the chemical process industries or to undertake research or teaching certificates.
	CO2	Candidates also hold the opportunity to explore the industrial, pharmaceutical, technological and commercial fields of chemistry as the course basically concentrates on the uses of chemistry in modern society.



Course Outcome Semester- II M.Sc.		
Subject with Code		Course Outcome
INORGANIC CHEMISTRY MCH201DSC	CO1	To give the students a thorough knowledge of the different theories to explain the bonding in coordination compounds.
	CO2	To improve the level of understanding of the chemistry of organometallic compounds, metal carbonyls and metal clusters.
	CO3	To give knowledge about some bioinorganic compounds and compounds of various block elements.
ORGANIC CHEMISTRY MCHE202DSC	CO1	To impart the student's thorough knowledge about the mechanisms of reactions of some selected functional groups in organic compounds and also to give an outline of applied organic chemistry and the applications of organic chemistry in various spheres of chemical sciences.
	CO2	To give an elementary idea of chemotherapy, organic compounds like carbohydrates, dyes and heterocyclic compounds.
	CO3	To study the fundamentals of terpenoids, alkaloids, vitamins, lipids and steroids.
PHYSICAL CHEMISTRY MCHE203DSC	CO1	Student after learning this course can be introduced about the Electrochemistry.
	CO2	Learn the molecular mass determinations (osmometry, viscometry, diffusion and light scattering methods).
	CO3	Understand the Concepts of distribution of molecules.
	CO4	Study about the Principle of polarography.



ANALYTICAL CHEMISTRY MCHE204DSC	CO1	To impart students a broad outline of the methodology of science in general and Chemistry in particular.
	CO2	The students will learn the important analytical and instrumental tools used for practicing chemistry.
	CO3	To develop skills required for the qualitative analysis of organic compounds, determination of physical constants.
BIOLOGY FOR CHEMIST MCHE201SE	CO1	A student can also become enlightened about food science, nanomaterials, drugs, plastics, dyes and paper.
	CO2	To give an elementary idea of chemotherapy, organic compounds like carbohydrates, dyes and heterocyclic compounds.
	CO3	To study the fundamentals of terpenoids, alkaloids, vitamins, lipids and steroids.



Course Outcome Semester- III M.Sc.		
Subject with Code		Course Outcome
NATURAL PRODUCTS - I MCHE301DSC	CO1	The student will be able to relate different kind of natural vitamins and steroids.
	CO2	They will be able to explain alkaloids & Terpenoids of a various group.
	CO3	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO4	Apply the various procedures and techniques for the experiments.
MEDICINAL CHEMISTRY-I MCHE302DSC	CO1	The student will be able to relate different kind of Antibiotics and Sulfa drugs.
	CO2	They will be able to explain various Stimulating Agents of a various groups.
	CO3	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO4	Apply the various procedures and techniques for the experiments.
INDUSTRIAL CHEMISTRY-I MCHE303DSC	CO1	Student after learning this course can be introduced about the agrochemicals.
	CO2	Learn the classification of surface-active agents.
	CO3	Understand the methods and applications of dyes.
	CO4	Study about the soap and detergents with their classification.
ADVANCED ORGANIC	CO1	The student will be able to relate different kind of Instrumental analysis and Elimination reactions.



CHEMISTRY-I MCHE304DSC		They will be able to explain various synthesis of alkene of a various group
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO3	Apply the various procedures and techniques for the experiments.
ENVIRONMENTAL CHEMISTRY MCHE301SE	CO1	To create environmental awareness to understand the fragility and sensitivity of environment, in particular the biosphere and the importance of its protection.
	CO2	This paper also gives elementary ideas on pesticides and fertilizers.



Course Outcome Semester- IV M.Sc.		
Subject with Code		Course Outcome
HETEROCYCLIC CHEMISTRY & ORGANIC REACTION MECHANISM MCHE401DSC	CO1	The student will be able to relate different kind of Antibiotics and Sulfa drugs.
	CO2	They will be able to explain various Stimulating Agents of a various groups.
	CO3	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO4	Apply the various procedures and techniques for the experiments.
MEDICINAL CHEMISTRY-II MCHE402DSC	CO1	The student will be able to relate different kind of Antibiotics and Sulfa drugs.
	CO2	They will be able to explain various Stimulating Agents of a various groups.
	CO3	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO4	Apply the various procedures and techniques for the experiments.
INDUSTRIAL CHEMISTRY-II MCHE403DSC	CO1	Student after learning this course can be introduced about the Industrial Paint and Varnish & Explosives.
	CO2	Learn the classification of paints.
	CO3	Understand the Methods of applying paints.
	CO4	Study about home products science.
ADVANCED ORGANIC CHEMISTRY-II	CO1	The student will be able to relate different kind of Instrumental analysis and Elimination reactions. They will be able to explain various synthesis of



MCHE404DSC		alkene of a various group.
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.
	CO3	Apply the various procedures and techniques for the experiments.
ORGANOMETALLIC COMPOUNDS MCHE401SE	CO1	To give the students a thorough knowledge of the different theories to explain the bonding in coordination compounds.
	CO2	To improve the level of understanding of the chemistry of organometallic compounds, metal carbonyls and metal clusters.



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Master of Science (M.Sc.) Physics
Batch 2019-21
Program Outcome (PO)



PO No.	Program Outcome Description
PO1	Advanced Subject Knowledge: Graduates will demonstrate advanced knowledge and expertise in their specialized field, including a comprehensive understanding of advanced concepts and theories.
PO2	Research Proficiency: Students will develop advanced research skills, including the ability to design and conduct independent research, analyze data, and draw meaningful conclusions.
PO3	Critical Analysis and Synthesis: Graduates will demonstrate advanced critical thinking abilities, the capacity to analyze complex scientific problems, synthesize information from diverse sources, and propose innovative solutions.
PO4	Scholarly Communication: Students will possess advanced skills in scientific writing, oral presentation, and effective communication of research findings to scientific and non-scientific audiences.
PO5	Independent Thinking: Graduates will exhibit independent thinking and creativity in problem-solving, research design, and the development of novel approaches in their field of specialization.
PO6	Leadership and Collaboration: Students will develop leadership skills and the ability to collaborate effectively with diverse teams, providing guidance and fostering a collaborative research environment.
PO7	Advanced Technology and Techniques: Graduates will be proficient in utilizing advanced technology, tools, and techniques specific to their discipline to enhance research and analysis capabilities.
PO8	Ethical Research Practices: Students will adhere to high ethical standards in research, ensuring the responsible conduct of research, integrity, and respect for intellectual property rights.
PO9	Continuous Learning and Adaptability: Graduates will demonstrate a commitment to continuous learning, keeping pace with emerging trends and technologies, and adapting to new challenges in their field.
PO10	Contribution to the Field: Students will make significant contributions to their specialized field, actively participating in conferences, publishing research, and advancing scientific knowledge through their research work.



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Master of Science (M.Sc.) Physics
Batch 2019-21
Program Specific Outcome (PSO)



PSO No.	Program Specific Outcome Description
PSO1	Advanced Physical Understanding and Research: Graduates of the M.Sc. Physics program will demonstrate advanced knowledge and expertise in the principles and theories of physics. They will engage in independent research, apply advanced mathematical techniques, and contribute to scientific discoveries and innovations in their specialized field.
PSO2	Advanced Experimental Skills and Instrumentation: Graduates will possess advanced experimental skills, including sophisticated measurement techniques and data analysis methods. They will design and conduct advanced experiments, analyze complex data sets, and contribute to the development of advanced scientific instrumentation.



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Master of Science (M.Sc.) Physics
Batch 2019-21
Course Outcome (COs)



Course outcomes semester-I M.Sc.

Subject with code		Course outcomes
CLASSICAL MECHANICS-I& ELECTRODYNAMICS MPHY101DSC	CO1	Solve differential equations like Legendre, Bessel and Hermite that are common in physical sciences.
	CO2	Solve the different partial differential equations encountered in physical problems and draw inferences from solutions.
	CO3	Solve transfer functions in Instrumentation using Laplace transforms.
	CO4	Apply Fourier transforms in Holography, Apply Matrices in the study of electrical circuits, Quantum Mechanics and Optics, Apply the knowledge of Tensors to understand phenomenon like stress and strain
CLASSICAL MECHANICS-I & ELECTRODYNAMICS-I MPHY102DSC	CO1	The student will be able to relate different kind of molecular spectra and statistical. They will be able to explain various solid-state physics.
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
	CO4	The students learn about different theories which help him/her to prove classical conditions.
QUANTUM MECHANICS-I & SOLID-STATE PHYSICS-I MPHY103DSC	CO1	The student will learn about equation of motion, its Schrodinger picture, Heisenberg picture, interaction picture, anisotropic and isotropic oscillators, normal mode of couple system of particle, quantum states, its vector and wave functions, Hilbert space of state vector, Dirac notation, dynamic variable and linear operators, product of operators, Schrodinger representation, unitary transformation induced by rotation of coordinate system, and conservation laws
	CO2	The student learns about quantum theory of momentum its eigen value spectrum, matrix representation of angular momentum operators, spin angular momentum, Pauli matrices and their properties, total wave function, non-relativistic Hamiltonian



		including spins, clebsch- Gordan coefficients, phase convention, spin wave function for a system of two spin-1/2 particles, and addition of spin and orbital angular momenta
	CO3	In this section student will learn about nearly free electron model, origin of the energy gap, magnitude of the energy gap, Bloch functions, kroning penny model, wave education of electron in a periodic potential, crystal momentum of an electron, empty lattice approximation, its solution near zone boundary, and study about metals and insulators
	CO4	In this section student will learn about band gap, equation of motion its physical derivation, holes, effective mass its physical interpretation, silicon and germanium intrinsic carrier concentration, mobility, impurity conductivity, donor state thermal ionization, thermoelectric effect, semimetals, super lattice, Bloch oscillator and Zener tunneling
ELECTRONICS-I MPHY104DSC	CO1	The student will be able to understand FET Parameters, basing, Sources and MOSFET amplifier. Differences between JFET and MOSFET. Also learn the different types of Multivibrators like A stable, Monostable& Bi-stable. They introduce with Voltage – Power amplifier, Performance quantities of Different types of Class A,B,C power amplifier. Get knowledge of Low-High Pass RC Circuit which is use in Different types of Waves shaping circuits. Learn the IC technology and circuit of 555 Timer and its work as a stable& Monostable circuit
	CO2	They Develop their skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	They also develop their working circuit knowledge with experiment skill and active to solve the Different query regarding any circuit or Instruments
	CO4	They learn how to fabricate the IC and basics about IC- 555
SPACE PHYSICS MPHY107SE	CO1	The student will be able to understand about atmosphere nomenclature, hydrostatic equations scale height, geopotential height, chemical concept of atmosphere, thermodynamic consideration, chemistry of middle atmosphere and thermosphere, ionosphere, photochemical processes, chapman theory of photo ionization, production of ionospheric layers and its morphology
	CO2	The student understands about night glow, dayglow, twilight glow, aurora, photometer for airglow measurement, applications, circulation in the magnetosphere, its electric fields,



		particle, plasma sphere and its dynamics, current system, magneto pause current tail current ring current and Birkland current
Course outcomes semester-II M.Sc.		
MATHEMATICAL PHYSICS-II & PROGRAMMING IN C- II MPHY201DSC	CO1	Apply the knowledge and skill in the design and development of Electronics circuits to fulfill the needs of Electronic Industry
	CO2	Become professionally trained in the area of electronics, optical communication, nonlinear circuits, materials characterization and lasers
	CO3	Pursue research related to Physics and Materials characterization
	CO4	Demonstrate highest standards of Actuarial ethical conduct and Professional Actuarial behavior, critical, interpersonal and communication skills as well as a commitment to life-long learning
STATISTICAL MECHANICS-II & COMPUTER-II MPHY202DSC	CO1	The student will be able to relate different kind of statistical mechanics and quantum statistics. They will be able to explain various computer uses
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
	CO4	Students can able to learn Microsoft word and its usages
	CO1	The student will learn about perturbation theory for discrete levels, equation in various orders of perturbation, non-degenerate case, removal of degeneracy, the effect of electric field on energy level of an atom(stark effect), two electron atoms, variation method for upper bound on ground state energy, application to exited state, trial function linear in variational parameters, hydrogen molecule, exchange interaction, the one dimensional Schrodinger equation, the Bohr-Somerfield quantum condition, the WKB solution of radial wave equation



QUANTUM MECHANICS-II &SOLID-STATE PHYSICS-II MPHY203DSC	CO2	The student learns about exact formal solution of the Schrodinger equation, general solution, propagators, alteration of Hamiltonian, transitions, sudden approximation, perturbation theory for time evaluation, perturbative solution for transition amplitude, selection rules, first order transitions, constant perturbation, harmonic perturbation, interaction of an atom with electromagnetic, radiation, and dipole approximation
	CO3	In this section student will learn about reduced zone scheme, periodic zone scheme, construction of fermi surfaces, nearly free electrons, electron orbits, hole orbits and open orbits, calculation of energy bands, tight binding method of energy bands, Wigner-Seitz method, cohesive energy, pseudo potential methods, experimental method in fermi surface studies, quantization of orbits in a magnetic field, De Hass- Van alphen effect, external orbits, fermi surface of copper, and magnetic breakdown
	CO4	In this section student will learn about Langevin diamagnetism education, quantum theory of diamagnetism of mononuclear system, para magnetism, rare earth ions, Hund rules, irons group irons, crystal field splitting, quenching of the orbital angular momentum, spectroscopic splitting factor, van vleck temperature-independent para magnetism, cooling by isentropic demagnetization, nuclear demagnetization, paramagnetic susceptibility conduction electrons
ELECTRONICS-II MPHY204DSC	CO1	The student will be able to understand the Differential amplifier, operational amplifier, its feedback & parameters, frequency Response, its applications; they develop the thoughts about different type of flip flop & types of Registers. They will be learning the Organization of Microprocessor based system, Microprocessors instruction set and computer Languages, Microprocessors architecture and its operation, Introduction of 8085 and its Instruction, Programming Techniques with Additional Instructions of 8085
	CO2	They Develop their skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	They also develop their working circuit knowledge with experiment skill and active to solve the Different query regarding any circuit or Instruments
	CO4	Students can able to learn about microprocessor 8085 and its programming techniques



SYNTHESIS OF MATERIAL MPHY207DSC	CO1	The student will be able to understand about solid state reaction method its principles, experimental procedure, reagents, mixing container material, heat treatment, analysis, kinetics of solid-state reaction, disadvantages, in thin film synthesis method learn about different techniques of it as like vacuum evaporation, sputtering, spin coating, dip coating, pulsed laser deposition, spray pyrolysis, chemical Vapour deposition
	CO2	The student understands about sol-gel method principle, lithium niobate, doped tin dioxide, silica for optical fiber, Czochralski Method, Bridgman and Stock barger Methods, Zone Melting, Precipitation from Solution or Melt Flux Method, Epitaxial Growth of Thin Layers. Vapour Phase Transport Methods
Course outcomes semester-III M.Sc.		
NUCLEAR PHYSICS-I & INSTRUMENTS MPHY301DSC	CO1	express the basic concepts of nuclear physics
	CO2	can tell a chronology of some of the major events in nuclear physics
	CO3	can identify some introductory terminology, can use the units and dimensions
	CO4	can express the radioactive decays,
STATISTICAL MECHANICS - II & COMPUTER-II MPHY302DSC	CO1	The student will be able to relate different kind of properties of macroscopic systems. They will be able to explain various properties of individual particles
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
	CO4	Students can able to learn about computer internet, virus and lots of things
	CO1	The student will learn about scattering cross section, general consideration, kinematics of scattering, differential and total cross sections, wave mechanical picture of scattering, its amplitude, green functions, formal expression, born approximation, its validity, born series and eikonal



QUANTUM MECHANICS-III &SOLID-STATE PHYSICS-III MPHY303DSC		approximation
	CO2	The student learns about asymptomatic behaviour of partial waves, phase shift, scattering amplitude in terms of phase shifts, differential and total cross section, optical theorem, potentials of finite range, low energy scattering, scattering by square well, hard sphere, coulomb potential, reduction of two body problem, the center of mass frame, transformation from center of mass frame to laboratory frame of reference and collision between identical particle
	CO3	In this section student will learn about ferromagnetic order, curie temperature and exchange integral, temperature depends on saturation, magnetization, saturation magnetization at absolute zero value, magnons, quantization of spin wave, thermal excitation of magnons, magnetic scattering, ferrimagnetic order, curie temperature and susceptibility of ferrimagnets, iron garnets, Neel temperature, anti-ferromagnetic order, magnons, ferromagnetic domains, anisotropy energy, coercitivity and hysteresis, geomagnetism and biomagnetism and force microscopy
	CO4	In this section student will learn about nuclear magnetic resonance, equation of motion, motional narrowing, hyperfine splitting its examples, F centers in alkali halides, donor atoms in silicon, knight shift, nuclear quadrupole resonance, ferromagnetic resonance, shape effect in FMR, spin wave resonance, antiferromagnetic resonance, electron paramagnetic resonance, zero field splitting, principle of MASER action and three-level MASER, LASERS
ELECTRONICS-III MPHY304DSC	CO1	The student will be able to understand the different pulse modulation, digital carrier systems, A.M Detector, Remote sensing systems, GIS, and Different types of Electrical Machine-like D.C motor & it's types, Induction motors and its types, Synchronous machines and stepper motors and some Phase converter like Single phase and three phase converters, Series converters, Dual converters
	CO2	They Develop their skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	They also develop their working circuit knowledge with experiment skill and active to solve the Different query regarding any circuit or Instruments
	CO4	Students can able to learn about basics of power electronics,



		their design, working, and detectors
RESEARCH METHODOLOGY MPHY307SE	CO1	The student will be able to understand about fundamental knowledge of research
	CO2	The student understands about literature collection, Components of Research Report/Thesis & Formatting and Typing
Course outcomes semester-IV M.Sc.		
Nuclear Physics-II & Bio-Physics MPHY401DSC	CO1	Explain the ground state properties of the nucleus for study of the nuclear structure behaviour
	CO2	Explain the deuteron behaviour at ground and excited states
	CO3	Apply deuteron physics and the Nucleon-Nucleon scattering for explaining the nuclear forces, Demonstration of the shell model and collective model descriptions, Apply various aspects of nuclear reactions in view of compound nuclear dynamics
	CO4	Students can able to learn about our bodies biomechanics and Neuro physics
CLASSICAL MECHANICS-II & ELECTRODYNAMICS- II MPHY402DSC	CO1	The student will be able to relate different kind of properties of classical mechanics. They will be able to explain various properties of electrodynamics
	CO2	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
	CO3	Apply the various procedures and techniques for the experiments
	CO4	Students can able to learn about the radiation and its effects and approximation methods of it



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COURSE OUTCOME

FACULTY OF SCIENCE



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Bachelor of Science (M.Sc.) (Mathematics)
Batch 2018-21
Program Outcome (PO)



Program Outcomes: At the end of the Program, students shall be able to

PO No.	Program Outcome Description
PO1	Advanced Subject Knowledge: Graduates will demonstrate advanced knowledge and expertise in their specialized field, including a comprehensive understanding of advanced concepts and theories.
PO2	Research Proficiency: Students will develop advanced research skills, including the ability to design and conduct independent research, analyse data, and draw meaningful conclusions.
PO3	Critical Analysis and Synthesis: Graduates will demonstrate advanced critical thinking abilities, the capacity to analyse complex scientific problems, synthesize information from diverse sources, and propose innovative solutions.
PO4	Scholarly Communication: Students will possess advanced skills in scientific writing, oral presentation, and effective communication of research findings to scientific and non-scientific audiences.
PO5	Independent Thinking: Graduates will exhibit independent thinking and creativity in problem-solving, research design, and the development of novel approaches in their field of specialization.
PO6	Leadership and Collaboration: Students will develop leadership skills and the ability to collaborate effectively with diverse teams, providing guidance and fostering a collaborative research environment.
PO7	Advanced Technology and Techniques: Graduates will be proficient in utilizing advanced technology, tools, and techniques specific to their discipline to enhance research and analysis capabilities.
PO8	Ethical Research Practices: Students will adhere to high ethical standards in research, ensuring the responsible conduct of research, integrity, and respect for intellectual property rights.
PO9	Continuous Learning and Adaptability: Graduates will demonstrate a commitment to continuous learning, keeping pace with emerging trends and technologies, and adapting



	to new challenges in their field.
PO10	Contribution to the Field: Students will make significant contributions to their specialized field, actively participating in conferences, publishing research, and advancing scientific knowledge through their research work.



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Bachelor of Science (M.Sc.)(Mathematics)
Batch 2018-21
Program Specific Outcome (PSO)



M.Sc. Mathematics:

PSO No.	Program Specific Outcome Description
PSO1	Advanced Mathematical Knowledge: Graduates of the M.Sc. Mathematics program will acquire advanced knowledge and expertise in advanced mathematical concepts, theories, and methods. They will demonstrate proficiency in abstract mathematical reasoning and advanced mathematical problem-solving techniques.
PSO2	Mathematical Modelling and Analysis: Graduates will develop skills in mathematical modelling and analysis to address complex real-world problems. They will apply advanced mathematical techniques to formulate and solve mathematical models, providing insights and solutions in various fields such as finance, engineering, and data science.



Course Outcomes Semester-I M.Sc (Mathematics)		
Subject with code		Course Outcomes
DIFFERENTIAL EQUATIONS MMAT101DSC	CO1	explain the concept of differential equation
	CO2	Can solve the problems of differential equations
	CO3	Classify to differential equation with respect to their order and linearity
	CO4	Apply the knowledge of the differential and difference equation which will enable them to Analyze dynamics of the processes.
GENERAL TOPOLOGY MMAT102DSC	CO1	get knowledge of fundamental concepts and methods in general topology
	CO2	apply his or her knowledge of general topology to formulate and solve problems of a topological nature in mathematics and other fields where topological issues arise
	CO3	Write the definitions of limit point compactness and sequentially compact spaces, and give examples of for both spaces, and explain the relation between the three types of compactness in general topological spaces and in metric spaces.
	CO4	Provide an elementary example as appropriate. Illustrating specified behaviour in relation to a given combination of basic definition and key theorems across the course
ABSTRACT ALGEBRA MMAT103DSC	CO1	Understand the concept of Group, Subgroup and Normal Subgroups
	CO2	Solving problem using the powerful concept of group action.



	CO3	Applying the concept of group action to real life problem such as counting
	CO4	Reason abstractly about mathematical structures.
NUMBER THEORY MMAT104DSC	CO1	Explain the concepts of divisibility, prime number congruence & number theorems
	CO2	Practice on linear congruence & quadric line & congruence.
	CO3	Use Fermat's theorem & Wilson's theorem
	CO4	Explain the concept of linear congruence and quadric linear congruence.
GRAPH THEORY MMAT105SE	CO1	Will be able to define the basic concepts of graphs, directed graphs and weighted graphs
	CO2	Express and prove hand shaking lemma
	CO3	They able to present information quickly and easily

Course Outcomes Semester-II M.Sc (Mathematics)		
Subject with code		Course Outcomes
PARTIAL DIFFERENTIAL EQUATION MMAT201DSC	CO1	Students can write down the complete solution of a linear homogeneous wave, heat or Laplace's equation on a rectangular or rotationally-symmetric domain using separation of variables.
	CO2	Students can apply the concept of linearity to solve non-homogenous PDEs by the method of linear superposition
	CO3	Apply analytical methods, and physically interpret the solution.
	CO4	Understand analogies between mathematical descriptions of different (wave) phenomena in physics and engineering.
DIFFERENTIAL GEOMETRY	CO1	To be able to understand the fundamental theorem for plane curves.
	CO2	Involutes and evolutes of space curves with the help of examples



MMAT202DSC	CO3	To be able to compute the curvature and torsion of space curves. Coefficients and their derivatives.
	CO4	Explain differential maps between surfaces and find derivatives of such maps.
COMPLEX ANALYSIS MMAT203DSC	CO1	Describe basic properties of complex integration and having the ability to compute such integrals.
	CO2	Identify curves and regions in the complex plane defined by simple expressions
	CO3	Understand the fundamental concept of complex variable theory and skill of contour integration to evaluate complicated real integrals via residue calculus.
	CO4	Demonstrate accurate and efficient use of complex analysis techniques.
OPERATION RESEARCH MMAT204DSC	CO1	Analyze any real life system with limited constrains and depict it in a model form
	CO2	Convert the problem into a mathematical model
	CO3	Understand variety of problems such as assignment, transportation, travelling, salesman etc.
	CO4	Formulate and solve problems as networks and graphs.
	CO5	Plan and implement suitable materials handling principles and practices in the operations.
INTEGRAL TRANSFORMS MMAT205SE	CO1	understanding regarding different type of integral transform
	CO2	Understand Fourier transform and its properties and will be able to solve the examples based on it.
	CO3	Have deep understanding of Laplace Transformation and its real life application.
	CO4	Evaluate the Fourier transform of a continuous function and be familiar with its basic properties.



Course Outcomes Semester-III M.Sc (Mathematics)		
Subject with code		Course Outcomes
ALGEBRA – II (FIELD THEORY) MMAT301DSC	CO1	Use diverse properties of field extensions in various areas
	CO2	Establish the connection between the concept of field extensions and Galois Theory
	CO3	Describe the concept of automorphism, monomorphism and their linear independence in field theory.
	CO4	Compute the Galois group for several classical situations. Solve polynomial equations by radicals along with the understanding of ruler and compass construction
FUNCTIONAL ANALYSIS – 1 MMAT302DSC	CO1	knowledge of central concepts from functional analysis, including the Hahn-Banach theorem.
	CO2	Understand and apply fundamental theorems from the theory of normed and Banach spaces, including Hahn-Banach theorem, the open mapping theorem and the closed graph theorem.
	CO3	Understand the notation of dot product and Hilbert space.
ADVANCED LINEAR ALGEBRA MMAT303DSC	CO1	Understand the concept of Vector space and subspace.
	CO2	Perform and interpret matrix operation
	CO3	Demonstrate an understanding of Inner product space.
MATHEMATICAL STATISTICS – 1 MMAT304DSC	CO1	Analyze statistical data using measures of central tendency, dispersion and location.
	CO2	Perform and interpret matrix operation
	CO3	formulate complete, concise, and correct mathematical proofs.
INTEGRAL EQUATION MMAT305SE	CO1	Solve integral equation of several types.
	CO2	Solve Simple IVP and BVP by using Calculus of several variables.
	CO3	Understand the relationship between integral and differential equations and transform one type into another.



Course Outcomes Semester-IV M.Sc (Mathematics)		
Subject with code		Course Outcomes
REAL ANALYSIS MMAT401DSC	CO1	Able to work comfortably with sets.
	CO2	Exposure to cardinal numbers and their compatibilities.
	CO3	Able to understand Differentiations and Integrations and their applications.
	CO4	Ability to acquire knowledge of Convergence series.
FUNCTIONAL ANALYSIS – 2 MMAT402DSC	CO1	Understand a strong foundation in functional analysis, focusing on spaces, operators, fundamental theorems and applications.
	CO2	Apply the spectral theorem to resolution of integral equation.
	CO3	Give an account of basic properties of operators on Banach spaces and Hilbert spaces.
NUMERICAL ANALYSIS MMAT403DSC	CO1	Apply well-known numerical techniques to solve engineering problems and evaluate the results.
	CO2	Understanding the theoretical and practical aspects of the use of numerical methods.
	CO3	Implementing numerical methods for a variety of multidisciplinary applications.
MATHEMATICAL STATISTICS – 2 MMAT404DSC	CO1	Calculate probabilities and quantiles for sampling distributions related to the normal distribution.
	CO2	Construction point interval estimators.
	CO3	Students will frame problems using multiple mathematical and statistical representations of relevant structures and relationships and solve using standard techniques.
RESEARCH METHODOLOGY MMAT405SE	CO1	Demonstrate the ability to choose methods appropriate to research aims and objectives.
	CO2	Understand the limitations of particular research methods.
	CO3	Develop skills in qualitative and quantitative data analysis and



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		presentation. Develop advanced critical thinking skills.
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COURSE OUTCOME
FACULTY OF SCIENCE

Master of Science (M.Sc.)

Batch 2020-22

Program Outcome (PO)

Master of Science Program outcomes (PO)

PO No.	Program Outcome Description
PO1	Advanced Subject Knowledge: Graduates will demonstrate advanced knowledge and expertise in their Specialized field, including a comprehensive understanding of advanced concepts and theories.
PO2	Research Proficiency: Students will develop advanced research skills, including the ability to design and Conduct independent research, analyze data, and draw meaningful conclusions.
PO3	Critical Analysis and Synthesis: Graduates will demonstrate advanced critical thinking abilities, the capacity to analyze complex scientific problems, synthesize information from diverse sources, and propose innovative solutions.
PO4	Scholarly Communication: Students will possess advanced skills in scientific writing, oral presentation, and effective communication of research findings to scientific and non-scientific audiences.
PO5	Independent Thinking: Graduates will exhibit independent thinking and creativity in problem-solving, research design, and the development of novel approaches in their field of specialization.
PO6	Leadership and Collaboration: Students will develop leadership skills and the ability to collaborate effectively with diverse teams, providing guidance and fostering a collaborative research environment.
PO7	Advanced Technology and Techniques: Graduates will be proficient in utilizing advanced technology, tools, and techniques specific to their discipline to enhance research and analysis capabilities.
PO8	Ethical Research Practices: Students will adhere to high ethical standards in research, ensuring the responsible conduct of research, integrity, and respect for intellectual property rights.
PO9	Continuous Learning and Adaptability: Graduates will demonstrate a commitment to continuous learning, keeping pace with emerging trends and technologies, and adapting to new challenges in their field.
PO10	Contribution to the Field: Students will make significant contributions to their specialized field, actively participating in conferences, publishing research, and advancing scientific knowledge through their research work.

Master of Science (M.Sc.)
Batch 2020-23
Program Outcome (PSO)

M.Sc. Microbiology:

PSO No.	Program Specific Outcome Description
PSO1	Advanced Microbiological Knowledge and Expertise: Graduates of the M.Sc. Microbiology program will acquire advanced knowledge and expertise in the study of microorganisms, including their genetics, physiology, pathogenesis, and ecological roles. They will demonstrate proficiency in advanced microbiological techniques and methodologies.
PSO2	Advanced Research and Applied Microbiology: Graduates will engage in advanced research and applied microbiology, addressing complex challenges in various domains such as healthcare, biotechnology, and environmental management. They will contribute to scientific advancements, develop innovative solutions, and apply their knowledge to practical scenarios.

Master of Science (M.Sc.)
Batch 2020-23
Course Outcomes (CO)

- Students of all graduate M.SC degree programs at the time of graduation will nbe able to learn:
- Course outcomes semester. I M.SC :-

SUBJECT WITH CODE		COURSE OUTCOME
1.Cell Biology (MMIC101DSC)	CO1	Describe the evolution, diversity and replication of cells;
	CO2	Explain the role of compartmentalization and signaling in cellular biology; Interpret and explain key experiments in the history of cell biology;
	CO3	Evaluate and apply knowledge of modern techniques in cellular biology.
2. Molecular biology and genetics (MMIC102DSC)	CO1	Gain basic understanding on human genetics & hereditary
	CO2	They learn about DNA, RNA and their replication, mutations, DNA repair mechanism.
	CO3	Students learn about transgenic animal, their application in pharmaceutical industry, cloning and its importance.
3. Biodiversity and Ecology (MMIC103DSC)	CO1	Student will gain an understanding of basic concept of biodiversity, Ecological services, Ecological concepts and its laws.
	CO2	Biodiversity and Ecology gives depth knowledge of population growth curve and its regulation, role of parks in all life on earth and metapopulation concept for discussing species in disturbed habitats and viability of their populations.
4. Microbial Taxonomy (MMIC104DSC)	CO1	Students will able to recall bacterial classification system including Whittaker five kingdom, hackle three kingdom.
	CO2	Students will gain an understanding the concept of pathogenic characteristics of microorganisms include replicate using host resources , exit and spread to a new host, reproduction of virus by lysogenic and lytic cycle, ecological importance of spirulina.
5.Bioinformatics part - I (MMIC101SE)	CO1	To learn basic concept in proteomics and their role in life science research.
	CO2	To learn theoretical concept in computer aided drug design and molecular modeling.
	CO3	To apply the role of computational drug discovery methods using various tools in bioinformatics.



• **Course outcomes semester. II M.SC :-**

SUBJECT WITH CODE		COURSE OUTCOME
1. Biochemistry (MMIC201DSC)	CO1	Students will gain about Chemical bonds and Stabilizing interactions, ionization of water, Energy flow: principles of thermodynamics, free energy and chemical potential, redox reactions.
	CO2	Students will learn basic knowledge about Carbohydrates, Glycolysis, Glycogenesis, TCA cycle, Electron transport system, Oxidative phosphorylation and photophosphorylation, Hexose monophosphate shunt.
	CO3	Students will learn basic knowledge about Amino Acids, lipids, proteins, Enzyme regulation: Allosteric enzyme regulation, Covalent modification.
2. Instrumentation and analytical techniques (MMIC202DSC)	CO1	Explain the basic principles of analyses and detection systems involved in photometric- fluorometric- and luminescence -based methods.
	CO2	Explain principles of electrophoresis and immunochemical techniques and discuss how these techniques can be used in molecular medicine.
	CO3	Discuss the use of enzyme kinetics in analytical methods.
3. Biostatistics and Research Methodology (MMIC203DSC)	CO1	Describe concepts of descriptive, inferential, parametric, non-parametric, tests in biostatistics.
	CO2	Describe concepts of categorical data analysis, association, prediction, reliability and validity in biostatistics.
	CO3	Choose statistical analysis of data based on types of variables and objective of analysis using SPSS and interpret their outcomes.
4. Bioprocess and Biochemical Engineering (MMIC204DSC)	CO1	Describe the growth of microorganisms.
	CO2	Determine the reaction stoichiometry for bioreactors and understand the operation of bioreactors.
	CO3	Recognize principles of bioreactor analysis and design.



	CO4	Understands the microbial and enzyme reactions in upstream bioprocessing and be able to calculate reaction rates and apply reaction kinetics to biological system.
5. Bioinformatics part 2 (MMIC201SE)	CO1	The program aims to utilize and understand biological databases to gather, store, retrieve, manage, analyze and integrate biological data for generating new knowledge.
	CO2	The program aims to impart extensive understanding and learning of theoretical concepts in life sciences. Each semester exclusively devotes at least one core in life sciences in each semester.
	CO3	Basic practical methodology is incorporated as practical sessions in laboratory courses in each semester.



• **Course outcomes semester. III M.SC :-**

SUBJECT WITH CODE		COURSE OUTCOME
1.(MMIC301DSC) Bacteriology and Virology	CO1	Students will gain knowledge about the different cell organelles of microorganisms and their detailed functions.
	CO2	Students will also study the growth and control of microbes as well as different bacteriological techniques involved in microbiology.
	CO3	Students will learn about the biomolecules by studying their structures and types
2.(MMIC302DSC) Genetics of bacteria and virus	CO1	To know Gene cloning and Gene cloning vehicles.
	CO2	To know what are Restriction Enzymes and their applications in the field of Genetic Engineering.
3.(MMIC303DSC) Microbial Physiology and Development	CO1	Define basic concept of microbial physiology.
	CO2	Explain microbial growth, growth kinetics and factors affecting growth.
	CO3	Evaluate the importance of central pathways off carbohydrate metabolism for microbial physiology
	CO4	Explain nutrient uptake and protein excretion.
	CO5	Explain the mechanism of nitrogen fixation and its regulation.
4.(MMIC304DSC) IMMUNOLOGY	CO1	Will be able to explain the immunological terms.
	CO2	Defines the concept of immunology.
	CO3	Interpret the concept of immunogen.
	CO4	Discuss the concepts of antigen and antibody.



	CO5	Interpret the organs of the immune system
5. (MMIC301SE) Microbial diversity and extremophiles	CO1	Apply the knowledge to understand the microbial physiology and to identify the microorganisms.
	CO2	Understand the regulation of biochemical pathway and possible process modifications for improved control over microorganisms for microbial product synthesis.



• **Course outcomes semester. IV M.SC :-**

SUBJECT WITH CODE		COURSE OUTCOME
1. Recombinant DNA Technology (MMIC401DSC)	CO1	Technical know-how on versatile techniques in recombinant DNA technology.
	CO2	An understanding on application of genetic engineering techniques in basic and applied experimental biology.
2. Medical Microbiology (MMIC402DSC)	CO1	The student will be able to identify common infectious agents and the diseases that they cause.
	CO2	The student will be able to evaluate methods used to identify infectious agents in the clinical microbiology lab.
	CO3	The student will be able to recall microbial physiology including metabolism, regulation and replication
3. Food Technology (MMIC403DSC)	CO1	Learn about fundamentals of food microbiology
	CO2	Gain insight on spoilage of foods by microbes, microbial food poisoning.
	CO3	Understanding the process of fermentation of milk and other food products.
	CO4	Assessment of food quality in reference to microbial contamination.
4. Air and Water Microbiology (MMIC404DSC)	CO1	Understand the basic microbial structure and functions of various physiological groups of prokaryotes and eukaryotes and also learn the theory and practical skills in microscopy handling and staining techniques Know various Culture media and their applications
	CO2	Understand various physical and chemical means of sterilization and also learn various techniques for isolation of pure cultures.
	CO1	Monitor drug therapy of patient through medication chart review and clinical review



5. Drug discovery and clinical research (MMIC401SE)	CO2	Obtain medication history interview and counsel the patients
	CO3	Identify and resolve drug related problems
	CO4	Detect, assess and monitor adverse drug reaction



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FACULTY OF LAW



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LL.B

Bachelor Of Law (LL.B)
Batch 2018-23
Program Outcomes (PO)



Program Outcome:

- PO1 **Critical thinking:** To develop practical thinking amongst students so as to enable them to gain in depth knowledge of law.
- PO2 **Research skills:** To improve research skills by providing a platform by undertaking research assignments.
- PO3 **Legal knowledge:** To critique, analyse & apply the legal knowledge of their specialization in context.
- PO4 **Education skills:** To provide skills to become academicians and lifelong learners.
- PO5 **Awareness:** To create awareness and understanding of the ethical, social, political and economic context in which the basic concepts, values, principles and rules of the Legal System are competing.
- PO6 **Logical Legal Argument:** To develop logic all regular arguments through ability to research and critically analyse, evaluate and apply legal knowledge in problem solving and conflicting perspective soft heir Specialization.
- PO7 **In Globalized Perspective:** Contrast and distinguish between laws of different countries and learn from best practices across the globe.
- PO8 **Collaboration and Interdisciplinary Engagement:** Graduates will be capable of collaborating with legal professionals and professionals from other disciplines, fostering interdisciplinary approaches to address complex legal and societal issues.
- PO9 **Problem Solving and Legal Reasoning:** Graduates will exhibit strong problem-solving skills and legal reasoning abilities, enabling them to analyze complex legal issues, identify legal solutions, and apply reasoned judgment in legal decision-making.



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Bachelor Of Law (LL.B)
Batch 2018-23
Course Outcomes (CO)



PROGRAM: - LL.B		
Constitution Law-I FLLB110101	CO1	To integrate the values of the Constitution enshrines in the students.
	CO2	To link the application of fundamental rights in day-to-day life and identify the breach of fundamental rights.
	CO3	To apply the principles of fundamental rights through drafting of Writ Petitions, Public Interest Litigation or Representative Suits
	CO4	To illustrate the importance of Fundamental Duties and the moral obligation of the citizens to comply with the same.
Law of Contract FLLB110102	CO1	Understand the development of the rules and principles of law of contracts.
	CO2	Identify the application of Contractual principles to actual issues and problems.
	CO3	Identify and explain appropriate remedies for breach of contractual obligations.
	CO4	To analyse the impact of social and commercial issues on the evolution and application of general principles of contract law.
Law of Torts, Motor Vehicles Act & Consumer Protection Acts FLLB110103	CO1	Explain the law of private rights and remedies which are not covered by statute.
	CO2	Display understanding of the operation of this branch of common law and its potential of expansion which governs actions for damages for injuries to certain kinds of rights
	CO3	Demonstrate application of the principles of Law of Torts in contemporary areas
	CO4	Appraise the differing requirements which lead to civil liability for different torts against person and property
Banking Law FLLB110104	CO1	Understand the various reforms in banking sector and will be updated with the knowledge of laws related to banking business in India.
	CO2	To be able to analyze the various laws related to banking business in India and will be able to understand the various banker-customer relations depending on the functions and banking transactions.
	CO3	To comprehend the various challenges and risks involved in the banking business such as NPAs and will be able to suggest overcoming from these challenges.
	CO4	To be well acquainted with the laws related to Foreign Exchange as banking business has grown and widened



		its scope to the other countries as well.
LAW OF CRIMES – I (IPC) FLLB110105	CO1	To understand the various reforms in banking sector and will be updated with the knowledge of laws related to banking business in India.
	CO2	To be able to analyze the various laws related to banking business in India and will be able to understand the various banker-customer relations depending on the functions and banking transactions.
	CO3	Comprehend the various challenges and risks involved in the banking business such as NPAs and will be able to suggest overcoming from these challenges.
	CO4	To be well acquainted with the laws related to Foreign Exchange as banking business has grown and widened its scope to the other countries as well.
	CO1	To understand the various reforms in banking sector and will be updated with the knowledge of laws related to banking business in India.
CONSTITUTION LAW-II FLLB120106	CO1	To correlate the different provisions of the Constitution and comprehend how the Government functions
	CO2	To explain the functioning of each organ of the Government independently and linking one to the other
	CO3	To question the shortcomings/defects/lack of procedure in relation to Contemporary government policies
	CO4	To illustrate the role of judiciary as a moderator and adjudicator for the disputes between the government and the citizens and the inter-governmental disputes.
SPECIAL CONTRACT FLLB120107	CO1	Understand the legal rules and concepts governing the law of agency, bailment, indemnity, guarantee, sales of goods and partnership.
	CO2	To demonstrate their understanding and application of general principles of contract in the diverse situations in the field of special contracts.
	CO3	Analysis and application of the principles of Contract law in commercial relationships of agency, bailment, indemnity, guarantee, sales of goods and partnership.
	CO4	Synthesis of case laws, identification of issues, applicability of relevant provisions and analysis of the judicial decisions with reference to the Indian statutes
LAW OF CRIME – II (Cr.P.C) FLLB120108	CO1	Understand the rationale of Criminal Procedure Code and importance of the Fair Trial in the light of Human Rights.
	CO2	Have in-depth knowledge of pretrial process, Constitutional and human rights of the accused followed in Indian Criminal Justice System.



	CO3	To Know the Court System, Power of the Courts and Trial Process followed in
	CO4	To be familiar with basic concepts, provisions, case laws, principles, procedures, forms followed and applied Cr.P.C along with the jurisprudential understanding
CIVIL PROCEDURE CODE FLLB120109	CO1	Well versed with the knowledge of civil procedure.
	CO2	Having in-depth knowledge about the history the Code of Civil Procedure in India and the details of procedure for reprisal of civil rights.
	CO3	Able to apply the procedure of filing the suit in the court, the documents in support and against, evidence taken, dimensions of an interim order, the peculiar nature of the
	CO4	Well versed with the knowledge of civil procedure.
LAW OF EVIDENCE FLLB120110	CO1	Students will able to apply principles of evidence to the hypothetical and factual circumstances.
	CO2	Students will able to appreciate evidence and also able to conduct examination of witnesses in the law court once they join litigation.
	CO3	Students will able to gather evidences Oral / Documentary form.
	CO4	Students will able to find out lacunae in the existing system
Jurisprudence FLLB130411	CO1	Understand the basics of the theories of Law and the skills of interpretation based on theories of law.
	CO2	Apply the theories of law and concepts identify various methods of Legal Reasoning and accurately deduce facts and apply legal principles.
	CO3	Appreciate and apply critical and analytical thinking and expand their layering and research skills with the help of problem-solving method.
	CO4	Understand the basics of the theories of Law and the skills of interpretation based on theories of law.
Labour & Industrial Law-1 FLLB130412	CO1	Understand in theoretical and jurisprudential foundation for a complete understanding about labour laws.
	CO2	Understand general principles of labour and industrial laws in the light of the development and legislations, socio- economic scenario and human rights values to be enshrined in labour legislations.
	CO3	Examine perspective methods of Labor disputes and welfare than by means of adjudication
	CO4	Identify the gaps in the law and provide suggestions for further research.
Labour & Industrial	CO1	Demonstrate and be familiar with the major rules and



Law-2 FLLB130413		principles governing the areas of labour and industrial laws.
	CO2	Critically analyze the various legislations governing industrial relations, employee security, dispute resolution, prevention of sexual harassment etc.
	CO3	Contribute to the development of the principles of labour laws sensitization in the light of the development and legislations, ethics, values and human rights to be implemented by corporations
	CO4	Test the acquired knowledge and practical know how by visit to trade union office, Employee state insurance corporation, Pune Municipal Corporation, including future cases involving disputes.
Property Law FLLB130414	CO1	Students will be able to analyze and define the concept and nature of transfer of immovable property, and illustrate the different types of transfers and rules relating to it.
	CO2	They will be able to analyze the rule relating to transfer of property within two living persons and the consequences of it
	CO3	Evaluate the provisions relating to general transfer of immovable property.
	CO4	Determine and analyze the provisions of Sale of Immovable Property and rights and liabilities of seller and buyer.
Administrative Law FLLB130415	CO1	Students will be able to analyze and define the concept and nature of transfer of immovable property, and illustrate the different types of transfers and rules relating to it.
	CO1	To get acquainted with the theories of Administrative Law and control mechanism over administrative authorities for smooth functioning of democracy
	CO2	To understand the utility of adjudicatory power and discretionary power employed by the administrative authorities
	CO3	To develop the analytical skill through various caselaws.
Family Law-1 FLLB140416	CO4	To learn about the maintenance of transparency and accountability of administration
	CO1	In a divorce case, one of the outcomes is the issuance of a divorce decree by the court. This document officially terminates the marriage and outlines the terms of the divorce, including the division of assets, spousal support, and child custody arrangements.
	CO2	In cases involving child custody, the court may issue orders determining the custody arrangement, visitation schedule, and decision-making authority for the parents. The best interests of the child are typically the primary consideration.



	CO3	The court may order one spouse to pay spousal support to the other, depending on factors such as the duration of the marriage, each spouse's financial situation, and their contributions during the marriage. Spousal support may be temporary or long-term.
	CO4	Family law cases often involve the division of marital property and assets. The court may issue orders specifying how property, debts, and assets acquired during the marriage are to be divided between the spouses.
Family Law-2 FLLB140417	CO1	Understand the concept, functions and factors associated with marriage and family
	CO2	Comprehend the problems in marriage and family and examine the effect of the problems on the children, family and on the society and explore its remedial measures
	CO3	Recognize current issues in marriage and family setting and changing patterns
Company Law FLLB140418	CO1	The students will be able to demonstrate knowledge of law in relation to structure, function and role of corporate management.
	CO2	The students will be able to apply, interpret, analyze, the company law provisions relating to corporate governance, corporate democracy, restructuring, reorganizing, mergers, amalgamation of corporations and winding up especially in the light of Insolvency and Bankruptcy Code.
	CO3	The students will be able to analyze the growing ambit of Company law and the rules framed under it in the light corporate abuse in national and international context.
Public International Law FLLB140419	CO1	Understand the sources and subjects of international law and foreign affairs. (Understanding based)
	CO2	Know the basic nature of international law and its working under decentralized system. (Knowledge based)
	CO3	Examine the historical evolution of international law doctrines, standards, and tests. (Evaluation level)
	CO4	Know the fundamental principle of international law which is followed by states during their practice. (Knowledge based)
Taxation FLLB140420	CO1	To enable the students to understand the concept of taxation with reference to India and to analyze the rules and principles of direct tax as well as applying them to concrete Instances.
	CO2	Understand the theoretical concepts of taxation, direct and indirect tax laws.
	CO3	Apply the learning to real life tax computations relating to sources of income and file individual Income Tax Return.
	CO4	TO analyze the concepts and issues of international taxation



		and transfer pricing.
Environment Law FLLB150421	CO1	Learning about the significance of developments in international environmental law and the fundamental principles that have emerged.
	CO2	Exposition about the human right to environment and constitutional framework governing environment in select countries, including India. .
	CO3	Comprehending the statutory and regulatory mechanisms pertaining to environment in India.
	CO4	Understanding judicial response to environmental issues in India.
Trust and RTI Act FLLB150422	CO1	It would further help students to get an insight of the Trust and equity laws.
	CO2	It would further help students to get an insight of the Trust and equity laws.
	CO3	Analyse the legal aspects in the Right to Information Act in the light of ethics, value and human rights
	CO4	Identify the Exemptions from Disclosure of Information, Partial Disclosure and "Third Party" Information.
Interpretation of Statutes FLLB150423	CO1	Identify and apply subsidiary rules of interpretation.
	CO2	Understand the process of interpretation and its utility
	CO3	Understand the epistemological foundations of legal interpretation and the various jurisprudential accounts that seek to justify legal interpretation in its varied forms.
	CO4	Apply the various methods of interpretations and rules of interpretations
Human Rights Law FLLB150424	CO1	The course of Human Rights is designed to prepare for responsible citizenship.
	CO2	To impart education on national and international regime of Human Rights.
	CO3	To awareness of the relationship between Human Rights, democracy and development and to foster respect for international obligations for peace and development;
Intellectual Property Rights FLLB150425	CO1	Understand the basic principles enunciated in international agreements relating to IP and various IPs in Indian as well as International Context
	CO2	Analyze the IP laws vis-à-vis Contemporary issues in the world
	CO3	Ap Apply the IP laws in day-to-day life
	CO4	Analyze and argue for and against the balance between the interest of the Stake holder vis-à-vis public interest.
Drafting, Pleading and	CO1	Analyze and apply general principles of drafting and



Conveyance FLLB160426		veyancing.
	CO2	Use effective writing techniques to draft different types of legal documents.
Professional Ethics FLLB160427	CO1	Self-awareness of potential sources of bias vis-a-vis dealing with the clients, the bench and the bar; (as described in the “7 Lamps of Justice).
	CO2	knowledge of professional standards;
	CO3	An Analysis of ethical dilemmas and development of skills to decide on a course of action (based on the case studies); and
	CO4	Performance in the moment when the lawyer faces an ethical dilemma (through active role plays and deliberations and experiences of practicing advocates).
Alternative Dispute Resolution FLLB160428	CO1	Understand the fundamental concepts of ADR and identify the nature of dispute and limitations of the formal judicial systems to effectively offer its resolution; Compare and contrast the strengths and weakness of different dispute resolution methods and choose the best method for dispute resolution in their case.
	CO2	Solve problems and disputes amicably through appropriate ADR mechanism and encourage people to use ADR.
	CO3	Communicate effectively, choose appropriate negotiation strategy employ the best techniques during negotiation or mediation knowing their BATNA, WATNA and MLATNA; Draw settlement agreements.
	CO4	Solve the ethical dilemmas while acting as a negotiator, mediator and arbitrator;
Moot Court FLLB160429	CO1	Understand the practical application of law.
	CO2	Familiarize with the procedure.
	CO3	Prepare and argue the cases.
Legal Language FLLB160430	CO1	Understand the nuances of language and its use
	CO2	Get a command over the English language and speak fluently and write impressively
	CO3	To distinguish good writing from bad writing



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GLOBAL
UNIVERSITY**

Approved By Govt. of Gujarat
(Recognized by USC under Section 22 & 21(i) of 1956)
(Gujarat Private State University Act 4 of 2018)

B.COM LL.B

Bachelor of Integrated Law (B.Com LL.B)

Batch 2018-23

Program Outcomes (PO)



-
- PO1 **CRITICAL THINKING:** To develop critical thinking amongst students so as to enable them to gain in depth knowledge of law.
- PO2 **ACQUIRE SKILLS:** The program provides an opportunity for students to acquire skills by understanding subjects pertaining to the Commerce like; Financial Accountancy, Business Economics and Business Management, Human Resource Management etc. as well as Substantive, Procedural and Clinical Laws.
- PO3 **PROVIDE SKILLS:** To provide skills to become academicians and lifelong learners.
- PO4 **CREATE AWARENESS:** To create awareness and understanding of the ethical, social, political and economic context in which the basic concepts, values, principles and rules of the Legal System are competing
- PO5 **DEVELOP LOGICAL LEGAL KNOWLEDGE:** To develop logical legal arguments through ability to research and critically Analyse, evaluate and apply legal knowledge in problem solving and conflicting perspectives of their Specialization
- PO6 **ACQUIRE REQUISITE SKILLS:** To acquire requisite skills and expertise by organizing Moot Courts, Seminars and Workshops on socio-legal issues.
- PO7 **ANALYSE LEGAL ASPECTS:** To critique, analyse & apply the legal knowledge of their specialization in context
- PO8 **NURTURE THE STUDENTS:** To nurture the students to become the soldiers of justice in realizing constitutionally enshrined goals of establishing a just society.



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Batch 2018-23

**Program Specific Outcomes
(PSO)**



- PSO1** ■ Acquisition of Advance Knowledge in The Specific Chosen Area of Specialization.
- PSO2** Strengthen the Research Ability to Undertake Minor/Major Research and Help the Students for The Further Knowledge of Research in Law



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Batch 2018-23
Course Outcomes (CO)



Program: B.Com LL.B		
LAW OF TORTS (M.V. ACT & CONSUMER PROTECTION) FLIC310101	CO1	Explain the law of private rights and remedies which are not covered by statute
	CO2	Display understanding of the operation of this branch of common law and its potential of expansion which governs actions for damages for injuries to certain kinds of rights
	CO3	Demonstrate application of the principles of Law of Torts in contemporary areas
	CO4	Appraise the differing requirements which lead to civil liability for different torts against person and property
LEGAL METHODS & RESEARCH FLIC310102	CO1	Carry out independent research pertaining to any specific legal issue
	CO2	Design research, justifying use of various methods/tools to carry out the same
	CO3	Collect, analyse and interpret both quantitative and qualitative data
	CO4	Recognize primary and secondary sources of legal research material.
ENGLISH FOR LEGAL PROFESSIONALS-1 FLIC310103	CO1	Read and write Legal language in English including legal maxims, legal abbreviations and their usage
	CO2	Read and explain legal texts, cases and legislations
	CO3	Interpret and apply a concept to synthesize and form opinions and arguments on any topic
	CO4	write abstract, synopsis, legal essays, legal notices & short articles
GENERAL PRINCIPLES OF ECONOMICS FLIC310104	CO1	Identify the basic characteristics of a rational individual decision maker
	CO2	Explain the idea of the law of demand and supply and offer advice on the elasticity of demand and supply
	CO3	Outline the characteristics of idea of firm structure, organizational behavior and nature of Market
	CO4	Establish the link between idea of welfare, externalities, public goods and common resources
	CO5	Learn about individual decision making as a consumer and firm



	CO6	Be able to think about a number of policy questions relevant to the operation of the real economy
FUNDAMENTALS OF ACCOUNTING FLIC310105	CO1	Exemplify to prepare and analyse the financial statements
	CO2	Acquire the basic concept of accounting terms.
	CO3	Journalize the ability to rectify the errors in bank reconciliation statement
	CO4	Exposed to various methods of depreciation and insurance accounting.
	CO5	Demonstrate insight into single and double entry system of accounting
	CO6	Determine the basics concepts of financial accounting
CONSTITUTIONAL LAW-I FLIC320101	CO1	To integrate the values of the Constitution enshrines in the students.
	CO2	To link the application of fundamental rights in day-to-day life and identify the breach of fundamental rights
	CO3	To apply the principles of fundamental rights through drafting of Writ Petitions, Public Interest Litigation or Representative Suits
	CO4	To illustrate the importance of Fundamental Duties and the moral obligation of the citizens to comply with the same.
LAW OF CONTRACT FLIC320102	CO1	Understand the development of the rules and principles of law of contracts.
	CO2	Identify the application of Contractual principles to actual issues and problems.
	CO3	Identify and explain appropriate remedies for breach of contractual obligations.
ENGLISH FOR LEGAL PROFESSIONALS -2 FLIC320103	CO4	To analyse the impact of social and commercial issues on the evolution and application of general principles of contract law.
	CO1	Read and write Legal language in English including legal maxims, legal abbreviations and their usages
	CO2	Read and explain legal texts, cases and legislation
	CO3	Interpret and apply a concept to synthesize and form opinions and arguments on any topic and communicate effectively in oral discussions, debates, extempore and client counselling etc
	CO4	write abstract, synopsis, legal essays, legal notices & short articles.



	CO5	Students will acquire a good grasp on correct usage of English grammar in speaking and writing
BUSINESS ECONOMICS-2 FLIC320104	CO1	Explain the concepts like GDP and National Income etc
	CO2	Establish the inter-relationship between inflation and unemployment
	CO3	Describe the key factors of productivity and their impact on economic growth
	CO4	Distinguish between fiscal and monetary policies and their impact on economy
	CO5	To understand the concept and evaluation of national income concept and evaluation
	CO6	Too aware about different market condition and its price determination
ORGANIZATIONAL BEHAVIOUR AND BEHAVIOUR PSYCOLOGY FLIC320105	CO1	Understanding organization environment and behavior in organizations
	CO2	Understanding interpersonal behavior at workplace
	CO3	Gaining knowledge of intergroup behavior at workplace
	CO4	Application of Leadership and motivational principles
	CO5	Practical knowledge in change management and organizational development
BUSINESS COMMUNICATION FLIC230113	CO1	Ability for Effective Business
	CO2	Writing Effective Interpersonal Communication
	CO3	Developing and Delivering Effective Presentations.
	CO4	To participate effectively in groups with emphasis on listening, critical and reflective thinking and responding.
	CO5	To understand and apply basic principles of critical thinking, problem solving, and technical proficiency in the development of exposition and argument.
	CO6	To develop the ability to research and write a documented paper and/or to give an oral presentation
BUSINESS ENVIRONMENT FLIC230114	CO1	Understand the Factors Affecting Business
	CO2	Knowledge on Economic Policies of India
	CO3	Knowledge on Types of Foreign Investment
	CO4	Roles of Consumers and Environmentally Responsible Citizens
	CO5	Understand Environmental Problems and Ways of Handling



FUNDAMENTALS OF INTERNATIONAL BUSINESS FLIC230115	CO1	Explain the concepts in international business with respect to foreign trade/international business management.
	CO2	To understand the international trade theories
	CO3	Integrate concept in international business concepts with functioning of global trade
	CO4	Increased adaptability of management style across different cultures and organizational structures
	CO5	To understand the international functional strategie
CONSTITUTION LAW II FLIC230116	CO1	They can evaluate the basic concepts enshrined in the Indian Constitution
	CO2	They will be able to observe the enforceability of Fundamental rights and Directive principles.
	CO3	They will be aware of their fundamental duties.
	CO4	They can distinguish the responsibility of the State under Art. 12.
FAMILY LAW I FLIC230117	CO1	Distinguish the legal provisions under different personal laws.
	CO2	Analyze the provisions of marriage and divorce and grounds of divorce
	CO3	Understand matrimonial remedies and alimony and maintenance
	CO4	Illustrate the different basic concepts of Legitimacy, Adoption, Custody, maintenance
	CO5	Guardianship and parental rights for the betterment of society.
LEGAL THEORY (JURISPRUDENCE) FLIC230118	CO1	Understand the basics of the theories of Law and the skills of interpretation based on theories of law.
	CO2	Apply the theories of law and concepts identify various methods of Legal Reasoning and accurately deduce facts and apply legal principles.
	CO3	Appreciate and apply critical and analytical thinking and expand their lawyering and research skills with the help of problem-solving method
CORPORATE ACCOUNTING-1 FLIC240119	CO1	Acquire the knowledge in company accounts such as meaning of a company, characteristics of a company, definition of shares,
	CO2	Understand the accounting treatment in issue of shares at par premium and discount, issues of debenture,
	CO3	Develop the application skills to computation of pro-rate allotment, redemption of preference shares, profit and loss



		account and preparation of balance sheet of companies (new format).
	CO4	Familiarize the analytical skills in corporate accounting, calculation of underwriting commission, redemption of debentures in sinking fund method, valuation of shares and liquidators final statement.
	CO5	Evaluate the techniques for redemption of preference share, valuation of goodwill and shares, deficiency account in liquidation.
	CO6	Gain confidence in preparation of company accounts in new format, various methods for calculating good will and shares, and preparation of liquidator's final statement accounting.
INTRODUCTION TO DIRECT - INDIRECT TAXES FLIC240120	CO1	Acquire conceptual knowledge of Direct and Indirect Tax
	CO2	Acquire the complete knowledge of basic concepts of income tax
	CO3	Understand the concept of exempted incomes.
	CO4	Understand the provisions of agricultural income
	CO5	Calculate Residential status of a person.
	CO6	Identify and comply with the relevant provisions of the Income Tax Act as it relates to the income tax of individuals
FUNDAMENTALS OF BANKING FLIC240121	CO1	Discuss the impact of government policy and regulations on the banking industry.
	CO2	Evaluate the performance of the banking industry
	CO3	Discuss bank lending policies and procedures.
	CO4	To elucidate the broad functions of banks
	CO5	To understand the working of the Reserve Bank of India
	CO6	To grasp the conduct of monetary policy and its effect on the interest rate, credit availability, prices, and the inflation rate
CIVIL PROCEDURE CODE & LAW OF LIMITATION (CPC) FLIC240122	CO1	Familiarize with the concept of civil procedure and jurisdiction at civil courts.
	CO2	Evaluate the status of decree and judgment as well as order in the court's jurisdiction.
	CO3	Analysis the methods summary suits and other procedure as attendance witnesses, trial etc.
	CO4	To Know the detail procedure for redressal of civil rights, To Know the detail procedure for redressal of civil rights.
	CO5	Students will be able to recognize and address issues that arise in Civil Procedure that implicate relevant ethical, moral, and



		religious principles
FAMILY LAW -II FLIC240123	CO1	Understand the concept, functions and factors associated with marriage and family
	CO2	Comprehend the problems in marriage and family and examine the effect of the problems on the children, family and on the society and explore its remedial measures
	CO3	Recognize current issues in marriage and family setting and changing patterns
TRANSFER OF PROPERTY AND EASEMENT ACT FLIC240124	CO1	define the concept and nature of transfer of immovable property, and illustrate the different types of transfers and rules relating to it
	CO2	They will be able to analyse the rule relating to transfer of property within two living persons and the consequences of it.
	CO3	Evaluate the provisions relating to general transfer of immovable property.
	CO4	Determine and analyse the provisions of Sale of Immovable Property and rights and liabilities of seller and buyer
	CO5	Analyze and evaluate the provisions governing Mortgage, Lease, Exchange, Gift and Actionable Claims and also rights and liabilities of transferor and transferee
	CO6	Student should be able to demonstrate a high level of understanding in the domain of drafting of legal document relating to property matters such as sale deed, will
ENVIRONMENTAL LAW FLIC250125	CO1	Learning about the significance of developments in international environmental law and the fundamental principles that have emerged.
	CO2	Exposition about the human right to environment and constitutional framework governing environment in select countries, including India.
	CO3	Comprehending the statutory and regulatory mechanisms pertaining to environment in India.
	CO4	Understanding judicial response to environmental issues in India
MANAGEMENT ACCOUNTING – I FLIC250126	CO1	Describe Investigation
	CO2	Students got knowledge about the new branch of accounting
	CO3	Students got knowledge about the calculation of various Ratios.
	CO4	Students are equipped with management accounting



		techniques for the analysis and interpretation of financial statements
COST ACCOUNTING – II FLIC250127	CO1	Classify cost and prepare a subsequent cost Sheet
	CO2	Differentiate and appraise the cost sheet with the financial statement.
	CO3	Demonstrate an understanding of Contract Costing
	CO4	Demonstrate an understanding of Process Costing
LAW OF CRIME-I (I.P.C) FLIC250128	CO1	Understand the legal principles governing liability for offences against the person and property offences
	CO2	Analyze the principles governing criminal defenses
	CO3	Interpret a set of facts in order to identify legal issues arising, providing reasoned arguments and conclusions as to the criminal offences which may have been committed and defenses which may be available
	CO4	Identify strengths and weaknesses of areas of law in terms of underlying considerations of morality, principle and policy
LABOUR & INDUSTRIAL LAW-1 FLIC250129	CO1	Students should be able to draft legal documents required under labour or employment laws, rules and regulations.
	CO2	Students should be able to possess a thorough understanding of the Industrial Disputes Act, Factories Act, Trade Union Act etc
	CO3	Students should be able to understand the complex structure of the Labour rights protection agencies such as ILO, and other national trade Unions functions and protect the rights of many workers
	CO4	Students should be able to demonstrate a high level of understanding in learning the concepts like maternity rights, fair compensation, unfair labour practices etc
INTERPRETATION OF STATUTES FLIC250130	CO1	Identify and apply subsidiary rules of interpretation.
	CO2	Understand the process of interpretation and its utility
	CO3	Understand the epistemological foundations of legal interpretation and the various jurisprudential accounts that seek to justify legal interpretation in its varied forms
	CO4	apply the various methods of interpretations and rules of interpretations
LABOUR	CO1	Demonstrate and be familiar with the major rules and



&INDUSTRIAL LAW -II FLIC260131		principles governing the areas of labour and industrial laws.
	CO2	Critically analyze the various legislations governing industrial relations, employee security, dispute resolution, prevention of sexual harassment etc
	CO3	Contribute to the development of the principles of labour laws sensitization in the light of the development and legislations, ethics, values and human rights to be implemented by corporations
	CO4	Test the acquired knowledge and practical know how by visit to trade union office, Employee state insurance corporation, Pune Municipal Corporation, including future cases involving disputes.
MANAGEMENT ACCOUNTING -2 FLIC260132	CO1	Describe Investigation
	CO2	Students got knowledge about the new branch of accounting
	CO3	Students got knowledge about the calculation of various Ratios
	CO4	Students are equipped with management accounting techniques for the analysis and interpretation of financial statements.
LAW OF CRIME - CRPC-II FLIC260133	CO1	The students would learn about the importance of the various kinds of Procedures and the problems to be encountered while following the same
	CO2	Students should be able to draft legal documents required to produce potential procedural practice in criminal matters
	CO3	Students should be able to possess a thorough understanding of the detailed procedure involved in tune with the substantive criminal law and its inter- relationship.
	CO4	Students should be able to understand the complex structure of the Criminal law system in the country and the precious value Procedural Law
	CO5	Students should be able to demonstrate a high level of understanding in learning the concepts like Charge, Trial, Appeal Review and Revision etc
LAW OF EVIDENCE FLIC260134	CO1	Students will able to apply principles of evidence to the hypothetical and factual circumstances.
	CO2	Students will able to appreciate evidence and also able to



		conduct examination of witnesses in the law court once they join litigation.
	CO3	Students will able to gather evidences Oral / Documentary form
	CO4	Students will able to find out lacunae in the existing system
DRAFTING, PLEADING&CONVE YANCING (CC) FLIC260135	CO1	Draft different forms of bills, acts, orders, rules, schedules etc.
	CO2	Understand the rules and regulation making power
	CO3	: Illustrate the other Aspects of Acts like Punctuation; Marginal Notes; rovisions;Illustrations; Presumptions; Use of non-obstante clauses;
BUSINESS ORGANIZATION AND MANAGEMENT FLIC260136	CO1	To familiarize the general principles of management.
	CO2	To understand the scientific principles and techniques
	CO3	To impart knowledge about Total Quality Management
	CO4	Explain the various stages of product life cycle
PUBLIC INTERNATIONAL LAW FLIC170838	CO1	Understand the sources and subjects of international law and foreign affairs. (Understanding based)
	CO2	Know the basic nature of international law and its working under decentralised system.
	CO3	Examine the historical evolution of international law doctrines, standards, and test
	CO4	Know the fundamental principle of international law which is followed by states during their Practice
ADMINISTRATIVE LAW FLIC170839	CO1	To get acquaint with the theories of Administrative Law and control mechanism over administrative authorities for smooth functioning of democracy
	CO2	To understand the utility of adjudicatory power and discretionary power employ by the administrative authorities
	CO3	To develop the analytical skill through various caselaws.
	CO4	To learn about the maintenance of transparency and accountability of administration
COST & FINANCIAL ACCOUNTING – I FLIC170841	CO1	Developing the knowledge of different methods and techniques of Costing
	CO2	Enabled the students to apply the costing techniques in different industries
	CO3	Students are familiarized with the concept of budget and preparation of cash budget



	CO4	Students got knowledge about the calculation of various Ratios.
	CO5	Students are equipped with management accounting techniques for the analysis and interpretation of financial statements.
MEDIATION & CONCILIATION AND ARBITRATION – I FLIC170842	CO1	Provide sound theoretical and practical knowledge of the key principles of the conciliation/mediation processes;
	CO2	Strengthen the understanding and analyse the role and functions of the conciliator/mediator
	CO3	Provide techniques and guidance on how to improve the role of conciliators/mediators
	CO4	Foster knowledge sharing and exchange of best practices related to conciliation/mediation
	CO5	Promote the application of key ILO principles and values on this matter
CYBER LAW AND IT ACT FLIC170843	CO1	Analyze and evaluate the cyber security needs of an organization.
	CO2	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation
	CO3	Measure the performance and troubleshoot cyber security systems.
	CO4	Implement cyber security solutions and use of cyber security, information assurance, and cyber/computer
	CO5	Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators
INTELLECTUAL PROPERT RIGHT FLIC180843	CO1	Understand the basic principles enunciated in international agreements relating to IP and various IPs in Indian as well as International Context
	CO2	Analyze the IP laws vis-à-vis Contemporary issues in the world
	CO3	Apply the IP laws in day to day life
	CO4	Analyze and argue for and against the balance between the interest of the Stake holder vis-à-vis public interesT
PROFESSIONAL ETHICS &PROFESSIONAL	CO1	self-awareness of potential sources of bias vis-a –vis dealing with the clients, the bench and the bar; (as described in the “7 Lamps of Justice)
	CO2	knowledge of professional standards
	CO3	analysis of ethical dilemmas and development of skills to



		decide on a course of action (based on the case studies)
	CO4	performance in the moment when the lawyer faces an ethical dilemma (through active role plays and deliberations and experiences of practicing advocates).
INDIAN FINANCIAL SYSTEM FLIC180846	CO1	Make the students to aware of the fundamentals of banking and knowledge of banking operations
	CO2	Analysis the Role and organization structure of Indian banking system
	CO3	Relate the Regulation of Indian Banking Act 1949 and their Progress & performance
	CO4	Acquaint the students with Bank Nationalization Process and its effects
	CO5	Apply the impart knowledge about functions, role and monetary policy of Reserve Bank of India
MEDIATION & CONCILIATION AND ARBITRATION-II FLIC180847	CO1	Provide sound theoretical and practical knowledge of the key principles of the conciliation/mediation processes
	CO2	Strengthen the understanding and analyse the role and functions of the conciliator/mediator;
	CO3	Provide techniques and guidance on how to improve the role of conciliators/mediators
	CO4	Foster knowledge sharing and exchange of best practices related to conciliation/mediation
	CO5	Promote the application of key ILO principles and values on this matter
ALTERNATIVE DISPUT LAWS FLIC180848	CO1	Understand the fundamental concepts of ADR and identify the nature of dispute and limitations of the formal judicial systems to effectively offer its resolution; Compare and contrast the strengths and weakness of different dispute resolution methods and choose the best method for dispute resolution in their case
	CO2	Solve problems and disputes amicably through appropriate ADR mechanism and encourage people to use ADR.
	CO3	Communicate effectively, choose appropriate negotiation strategy employ the best techniques during negotiation or mediation knowing their BATNA, WATNA and MLATNA; Draw settlement agreements.
	CO4	Solve the ethical dilemmas while acting as a negotiator, mediator and arbitrator



FORENSIC SCIENCE & CRIME DETECTION METHOD FLIC190847	CO1	Demonstrate competency in the collection, processing, analyses, and evaluation of evidence
	CO2	Demonstrate competency in the principles of crime scene investigation, including the recognition, collection, identification, preservation, and documentation of physical evidence
	CO3	Demonstrate an understanding of the scientific method and the use of problem-solving within the field of forensic science
	CO4	Identify the role of the forensic scientist and physical evidence within the criminal justice system
	CO5	Demonstrate the ability to document and orally describe crime scenes, physical evidence, and scientific processes.
LAW OF IMPORT & EXPORT FLIC190848	CO1	Prepare the documents as per standards of the authorities across national boundaries.
	CO2	Correlate the policies and documents as per the nature of the business.
	CO3	Adapt the business as per the contemporary business environment in international market
HUMAN RIGHTS' LAW AND PRACTICE FLIC190849	CO1	The course of Human Rights is designed to prepare for responsible citizenship.
	CO2	To impart education on national and international regime of man Rights.
	CO3	TO awareness of the relationship between Human Rights, democracy and development and to foster respect for international obligations for peace and development;
LEGAL RESEARCH METHODOLOGY FLIC190851	CO1	Carry out independent research pertaining to any specific legal issue
	CO2	Design research, justifying use of various methods/tools to carry out the same
	CO3	Collect, analyse and interpret both quantitative and qualitative data
	CO4	Recognise primary and secondary sources of legal research material.
	CO5	Use and apply secondary sources, case law and legislation using both papers based and online resource0073 to a research problem.



DISSERTATION AND VIVA FLIC190852	CO1	To gain familiarity with Legal phenomena
	CO2	To discover new facts
	CO3	To test and verify old facts
	CO4	To analyze the facts into new theoretical framework
	CO5	To disguise the weakness or merits of old legal aspects and analyze the effect of new legal system or law on society
PUBLIC INTEREST LAWYERING, LEGAL AID AND PARA LRGAL AID SERVICES FLIC1100852	CO1	Understand the sources and subjects of international law and foreign affairs
	CO2	Know the basic nature of international law and its working under decentralised system
	CO3	Examine the historical evolution of international law doctrines, standards, and tests
	CO4	Know the fundamental principle of international law which is followed by states during their practice
ANIMAL PROTECTION LAWS, FARMERSAND BREEDERS' RIGHT FLIC1100853	CO1	To provide citizens a strong foundation at the intersection of animal welfare and law in a world
	CO2	To develop a cutting-edge area of the law offering legal and policy solutions to problems of the coming decade
	CO3	To build legal capacity in individuals to aid law enforcement, governance and justice systems to improve implementation of the law in their professional or personal capacities.
BIODIVERSITY PROTECTION AND IPR FLIC1100854	CO1	To understand the importance of Biodiversity and its protection for the sustainable development in the society
	CO2	To understand the basic principles and doctrines of Biodiversity & GIs
	CO3	To analyse the global development of international Biodiversity law and policy
	CO4	To analyse the constitutional perspectives of protection of Biodiversity and GIs.
	CO5	To analyse and interpret the legislations and judicial decisions relating to Biodiversity protection
NARCOTICS DRUGS &PSYCHOTROPIC SUBSTANCES ACT (NDPS) FLIC1100856	CO1	Learn about narcotic and psychotropic substances.
	CO2	Understand the punishments under this Act for possession, trafficking and commercial purpose, etc.
	CO3	Know the sources of some basic drugs which are common in India.



	CO4	Discuss hand in hand how the Act works
LAND LAWS FLIC1100857	CO1	Identify and describe the revenue board courts and its function for a appeal revision and review.
	CO2	Demonstrate an understanding of the legal and regulatory framework for tribunals and the regulatory rules
	CO3	Demonstrate an understanding of the necessary professional skills of urbanization including analytical skills.



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B.A LLB

Bachelor Of Integrated Law (B.A LL.B)

Batch 2022-23

Program Outcomes (PO)



-
- PO1 **CRITICAL THINKING:** To develop critical thinking amongst students so as to enable them to gain in depth knowledge of law.
- PO2 **ACQUIRE SKILLS:** The program provides an opportunity for students to acquire skills by understanding subjects pertaining to the Commerce like; Financial Accountancy, Business Economics and Business Management, Human Resource Management etc. as well as Substantive, Procedural and Clinical Laws.
- PO3 **PROVIDE SKILLS:** To provide skills to become academicians and lifelong learners.
- PO4 **CREATE AWARENESS:** To create awareness and understanding of the ethical, social, political and economic context in which the basic concepts, values, principles and rules of the Legal System are competing.
- PO5 **DEVELOP LOGICAL LEGAL KNOWLEDGE:** To develop logical legal arguments through ability to research and critically Analyse, evaluate and apply legal knowledge in problem solving and conflicting perspectives of their Specialization
- PO6 **ACQUIRE REQUISITE SKILLS:** To acquire requisite skills and expertise by organizing Moot Courts, Seminars and Workshops on socio-legal issues.
- PO7 **ANALYSE LEGAL ASPECTS:** To critique, analyse & apply the legal knowledge of their specialization in context
- PO8 **NURTURE THE STUDENTS:** To nurture the students to become the soldiers of justice in realizing constitutionally enshrined goals of establishing a just society.



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Bachelor Of Integrated Law (B.A LL.B)
Batch 2018-23
Program Specific Outcomes
(PSO)



- PSO1** Acquisition of Advance Knowledge in The Specific Chosen Area of Specialization.
- PSO2** Strengthen the Research Ability to Undertake Minor/Major Research and Help the Students for The Further Knowledge of Research in Law



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Bachelor Of Integrated Law (B.A LL.B)

Batch 2022-23

Course Outcomes (CO)



Program: B.A LL.B		
LAW OF TORTS (M.V. ACT & CONSUMER PROTECTION) FLIC110201	CO1	Explain the law of private rights and remedies which are not covered by statute
	CO2	Display understanding of the operation of this branch of common law and its potential of expansion which governs actions for damages for injuries to certain kinds of rights
	CO3	Demonstrate application of the principles of Law of Torts in contemporary areas
	CO4	Appraise the differing requirements which lead to civil liability for different torts against person and property
LEGAL METHODS & RESEARCH FLIC110202	CO1	Carry out independent research pertaining to any specific legal issue
	CO2	Design research, justifying use of various methods/tools to carry out the same
	CO3	Collect, analyse and interpret both quantitative and qualitative data
	CO4	Recognize primary and secondary sources of legal research material.
ENGLISH FOR LEGAL PROFESSIONALS-1 FLIC110203	CO1	Read and write Legal language in English including legal maxims, legal abbreviations and their usage
	CO2	Read and explain legal texts, cases and legislations
	CO3	Interpret and apply a concept to synthesize and form opinions and arguments on any topic
	CO4	write abstract, synopsis, legal essays, legal notices & short articles
GENERAL PRINCIPLES OF ECONOMICS FLIC110204	CO1	Identify the basic characteristics of a rational individual decision maker
	CO2	Explain the idea of the law of demand and supply and offer advice on the elasticity of demand and supply
	CO3	Outline the characteristics of idea of firm structure, organizational behavior and nature of Market
	CO4	Establish the link between idea of welfare, externalities, public goods and common resources
	CO5	Learn about individual decision making as a consumer and firm



	CO6	Be able to think about a number of policy questions relevant to the operation of the real economy
FUNDAMENTALS OF SOCIOLOGY FLIC110205	CO1	Student will be able to explain social facts and society relates concepts.
	CO2	Student will be able to define and explain social concepts, social facts and student will be able to express empirical observations with sociology concepts.
	CO3	Student will be able to define and explain main characteristics of social institutions.
	CO4	Student will be able to convey the historical development of sociology.
	CO5	It also provides a foundation for the other more detailed and specialized course in sociology
CONSTITUTIONAL LAW-I FLIC120201	CO1	To integrate the values of the Constitution enshrines in the students.
	CO2	To link the application of fundamental rights in day-to-day life and identify the breach of fundamental rights
	CO3	To apply the principles of fundamental rights through drafting of Writ Petitions, Public Interest Litigation or Representative Suits
	CO4	To illustrate the importance of Fundamental Duties and the moral obligation of the citizens to comply with the same.
LAW OF CONTRACT FLIC120202	CO1	Understand the development of the rules and principles of law of contracts.
	CO2	Identify the application of Contractual principles to actual issues and problems.
	CO3	Identify and explain appropriate remedies for breach of contractual obligations.
ENGLISH FOR LEGAL PROFESSIONALS -2 FLIC120203	CO4	To analyse the impact of social and commercial issues on the evolution and application of general principles of contract law.
	CO1	Read and write Legal language in English including legal maxims, legal abbreviations and their usages
	CO2	Read and explain legal texts, cases and legislation
	CO3	Interpret and apply a concept to synthesize and form opinions and arguments on any topic and communicate effectively in oral discussions, debates, extempore and client counselling etc



	CO4	write abstract, synopsis, legal essays, legal notices & short articles.
	CO5	Students will acquire a good grasp on correct usage of English grammar in speaking and writing
BUSINESS ECONOMICS-2 FLIC120204	CO1	Explain the concepts like GDP and National Income etc
	CO2	Establish the inter-relationship between inflation and unemployment
	CO3	Describe the key factors of productivity and their impact on economic growth
	CO4	Distinguish between fiscal and monetary policies and their impact on economy
	CO5	To understand the concept and evaluation of national income concept and evaluation
	CO6	To aware about different market condition and its price determination
BASIC PSYCHOLOGICAL PROCESSES FLIC120105	CO1	The students will be able to familiarize to the field of psychology,
	CO2	They will extend necessary exposure to develop interest in the field
	CO3	They will be understanding the psychology of society
	CO4	Application of Leadership and motivational principles



LL. M

Master of Law (LL.M)

(Criminal Group)

Batch 2018-23

Program Outcomes (PO)



PO1 Mastery of Business Law Concepts:

Graduates should demonstrate a deep understanding of key business law concepts, including contracts, commercial transactions, corporate governance, and regulatory compliance. They should be able to analyze complex legal issues in the business context and provide sound legal advice.

PO2 Expertise in Criminal Law and Procedure:

Students should attain a thorough knowledge of criminal law principles and criminal procedure. This includes an understanding of substantive criminal laws, constitutional rights of the accused, evidence rules, and the stages of criminal proceedings.

Integration of Business and Criminal Law:

PO3

Graduates should be able to synthesize legal principles from both business and criminal law to address complex legal issues that may involve aspects of both domains. This includes understanding the legal implications of white-collar crime, corporate misconduct, and regulatory enforcement.

PO4 Legal Research and Writing Skills:

Students should develop advanced legal research and writing skills, enabling them to conduct in-depth legal analysis, draft persuasive legal documents, and communicate effectively in both written and oral forms. This skill set is crucial for success in legal practice and academia.

PO5 Ethical and Professional Conduct:

Graduates should be equipped with a strong ethical foundation and a commitment to professional conduct in the legal profession. This includes an understanding of ethical considerations in both business and criminal law contexts and the ability to navigate complex ethical dilemmas.

PO6 Critical Thinking and Problem-Solving:

The program should foster the development of critical thinking skills, enabling graduates to analyze legal issues, identify relevant factors, and propose effective solutions. This skill set is essential for addressing the dynamic and evolving challenges in both business and criminal law.



LL. M

Master of Law (LL.M)

(Criminal Group)

Batch 2018-23

Program Specific Outcomes (PSO)

Program Specific Outcomes

- PSO 1** To develop critical thinking and logical legal arguments amongst students to enable them to understand in-depth knowledge of legal system and apply legal knowledge in legal problem solving and conflicting perspectives of their Specialization.
- PSO 2** To create an awareness and understanding of the ethical, social, political, and economic context in which the basic concepts, values, principles, and rules of the Legal System are competing. Through live projects students will be able to interpret and analyse the legal and social problems and find 7 solutions to those problems.



**Master of Law (LL.M)
(Criminal Group)
Batch 2018-23
Course Outcomes (CO)**



Program : Master of Law in Criminal Law		
Indian Constitutional Law: The New Challenges FLLM110401	CO1	Explain the constitutional vision of justice and contemporary challenges to establish the same.
	CO2	Differentiate the role of state and non-state actors in protecting and upholding the constitutional goals.
	CO3	Analyze the concept of Federalism and constitutional scheme of distribution of power.
	CO4	Describe emerging trends in Civil Services and centre state relationship
Legal Education and Research Methodology FLLM110402	CO1	Student will be acquainted with the teaching of law and legal research methods.
	CO2	Learner will know interactive and learner centric methods of seminar, discussion and clinical legal education.
	CO3	Student will be acquainted with the insight into the aspects of quality, assessment and course designing.
	CO4	Learner will develop the understanding on skills in legal research including law-finding, legal analysis, use of ICT and legal writing.
Penology: Treatment of Offenders FLLM110403	CO1	understand correctional practices, reforms, and their consequences as well as various theories of social control
	CO2	Understand the various alternatives to punishment in order to achieve the goal of reformation.
	CO3	Analyze connection between the victims and the offenders.
	CO4	Apply the skills learnt during the course from practical dimensions
Drug Addiction, Criminal Justice and Human Rights FLLM110404	CO1	Demonstrate a comprehensive understanding of the dynamics of drug addiction
	CO2	Critically analyze the various responses within the criminal justice system to drug-related offenses
	CO3	Develop a strong awareness of the human rights implications associated with drug addiction
	CO4	Develop an awareness of the cultural and societal factors that contribute to the complexities of drug addiction
Jurisprudence	CO1	On successful completion of this course, you will be



FLLM120406		able to analyze the principles of laws.
	CO2	Demonstrate an advanced and integrated understanding of the political, social, historical, philosophical, and economic context of law.
	CO3	Engage in identification, articulation and critical evaluation of legal theory and the implications for policy.
	CO4	Critically analyze and research complex problems relating to law and legal theory and make reasoned and appropriate choices amongst alternatives.
Law & Social Transformation in India FLLM120407	CO1	Understanding the role of law in driving social change.
	CO2	Advocating for human rights and social equality.
	CO3	Analyzing legal frameworks for policy reforms.
	CO4	Engaging communities in social transformation effort.
Juvenile Delinquency FLLM120408	CO1	Understand causes and consequences of juvenile delinquency.
	CO2	Develop skills for risk assessment and evidence-based interventions.
	CO3	Familiarize with the legal framework and principles of juvenile justice.
	CO4	Learn preventive measures and community-based approaches.
Privileged Class Deviance FLLM120409	CO1	Develop the ability to critically analyze instances of deviant behavior within privileged classes, exploring the motivations, societal norms, and consequences of such behavior.
	CO2	Assess the impact of privileged class deviance on societal structures and institutions, recognizing how such behavior may exploit power dynamics and contribute to social inequality.
	CO3	Develop ethical reasoning skills in evaluating how societal norms, legal systems, and media representations may influence perceptions of privileged class deviance.
	CO4	Cultivate an understanding of the potential for social justice advocacy and reform in addressing issues related to privileged class deviance, with a focus on promoting fairness and equality in societal responses.
Judicial Process FLLM130411	CO1	To develop acquaintance with various theories of justice.
	CO2	Understanding of judgment writing skills.
	CO3	Use of various rules of Interpretation of statutes in dealing with the cases.
Principles of Human	CO1	Understand the historical growth of the idea of human rights.



Rights FLLM130412	CO2	Demonstrate an awareness of the international context of human rights.
	CO3	Demonstrate an awareness of the position of human rights in the UK prior to 1998.
	CO4	Understand the importance of the Human Rights Act 1998.
Collective Violence and Criminal Justice System FLLM130414	CO1	Gain a deep understanding of collective violence and its societal implications.
	CO2	Analyze legal frameworks and historical events shaping responses to collective violence.
	CO3	Evaluate the efficacy of criminal justice responses, identifying challenges and proposing improvements.
	CO4	Explore community policing and conflict resolution strategies for preventing and managing collective violence
General Principal of Law of Torts FLLM130415	CO1	Students will master the foundational concepts of tort law, including the elements of liability, classifications of torts, and distinctions between intentional and negligent torts
	CO2	Gain the ability to apply various theories of liability, such as negligence and strict liability, to realworld scenarios, enabling them to assess legal responsibility and causation in diverse contexts
	CO3	Cultivate the ability to critically examine and analyze both historic and contemporary tort cases, enhancing case analysis skills and enabling students to draw meaningful insights from legal precedents.
The Information Technology Act,2000 FLLM140417	CO1	Give Learners in Depth Knowledge of Information Technology Act and Legal Frame Work Of Right To Privacy, Data Security and Data Protection.
	CO2	To develop the conceptual understanding of the cyber dispute and its resolution.
	CO3	To trained the students to deal with cybercrimes cases.
	CO4	To explain the jurisdictional issues in cyber space.
Dissertation FLLM140419	CO1	To gain familiarity with Legal phenomena.
	CO2	To discover new facts.
	CO3	To test and verify old facts.
	CO4	To analyze the facts into new theoretical framework.
	CO5	To disguise the weakness or merits of old legal aspects and analyze the effect of new legal system or law on society.
Specific Torts	CO1	Tort is when one person or entity inflicts an injury upon



FLLM140420		another, in which the injured party can sue for damages.
	CO2	There are numerous specific torts including negligence, nuisance, trespass, defamation, etc.
	CO3	Students will learn to analyze the case laws and will be able to extract the exact issues of laws from the same



LL. M

Master of Law (LL.M)

(Business law)

Batch 2020-23

Program Outcomes (PO)



PO1 Mastery of Business Law Concepts:

Graduates should demonstrate a deep understanding of key business law concepts, including contracts, commercial transactions, corporate governance, and regulatory compliance. They should be able to analyze complex legal issues in the business context and provide sound legal advice.

PO2 Expertise in Criminal Law and Procedure:

Students should attain a thorough knowledge of criminal law principles and criminal procedure. This includes an understanding of substantive criminal laws, constitutional rights of the accused, evidence rules, and the stages of criminal proceedings.

Integration of Business and Criminal Law:

PO3 Graduates should be able to synthesize legal principles from both business and criminal law to address complex legal issues that may involve aspects of both domains. This includes understanding the legal implications of white-collar crime, corporate misconduct, and regulatory enforcement.

PO4 Legal Research and Writing Skills:

Students should develop advanced legal research and writing skills, enabling them to conduct in-depth legal analysis, draft persuasive legal documents, and communicate effectively in both written and oral forms. This skill set is crucial for success in legal practice and academia.

PO5 Ethical and Professional Conduct:

Graduates should be equipped with a strong ethical foundation and a commitment to professional conduct in the legal profession. This includes an understanding of ethical considerations in both business and criminal law contexts and the ability to navigate complex ethical dilemmas.

PO6 Critical Thinking and Problem-Solving:

The program should foster the development of critical thinking skills, enabling graduates to analyze legal issues, identify relevant factors, and propose effective solutions. This skill set is essential for addressing the dynamic and evolving challenges in both business and criminal law.



**Master of Law (LL.M)
(Business Group)
Batch 2020-23
Program Specific Outcomes
(PSO)**

- PSO 1** To develop critical thinking and logical legal arguments amongst students to enable them to understand in-depth knowledge of legal system and apply legal knowledge in legal problem solving and conflicting perspectives of their Specialization.
- PSO 2** To create an awareness and understanding of the ethical, social, political, and economic context in which the basic concepts, values, principles, and rules of the Legal System are competing. Through live projects students will be able to interpret and analyse the legal and social problems and find 7 solutions to those problems.



**Master of Law (LL.M)
(Business Group)
Batch 2020-23
Course Outcomes (CO)**



Master of Law in Business Law		
Indian Constitutional Law: The New Challenges FLLM110301	CO1	Explain the constitutional vision of justice and contemporary challenges to establish the same.
	CO2	Differentiate the role of state and non-state actors in protecting and upholding the constitutional goals.
	CO3	Analyze the concept of Federalism and constitutional scheme of distribution of power.
	CO4	Describe emerging trends in Civil Services and centre state relationship
Legal Education and Research Methodology FLLM110302	CO1	Student will be acquainted with the teaching of law and legal research methods.
	CO2	Learner will know interactive and learner centric methods of seminar, discussion and clinical legal education.
	CO3	Student will be acquainted with the insight into the aspects of quality, assessment and course designing.
	CO4	Learner will develop the understanding on skills in legal research including law-finding, legal analysis, use of ICT and legal writing.
LAW OF EXPORT IMPORT REGULATION FLLM110303	CO1	Acquire a thorough understanding of the legal frameworks governing export-import regulations, encompassing international trade agreements, treaties, and national laws, to provide a solid foundation for navigating the complexities of cross-border transactions
	CO2	Develop expertise in ensuring compliance with export-import regulations, covering licensing requirements, documentation procedures, and customs protocols, enabling students to adeptly navigate legal obligations and minimize risks in international trade.
	CO3	Cultivate skills in identifying, analyzing, and managing legal risks associated with export-import activities, including sanctions, embargoes, and anti-money laundering regulations, to equip students with the ability to proactively address potential challenges in the global marketplace.
	CO4	Evaluate the impact of national and international trade policies on export-import regulations, enabling students to analyze the strategic implications for businesses and contribute to



		informed decision-making in a
LAW OF INDUSTRIAL AND INTELLECTUAL PROPERTY FLLM110304	CO1	Develop a comprehensive understanding of the legal frameworks governing industrial and intellectual property
	CO2	Acquire practical skills in applying industrial and intellectual property laws
	CO3	Explore strategies for safeguarding innovation and creativity through intellectual property laws
	CO4	Develop expertise in formulating effective commercialization strategies for intellectual property assets
Jurisprudence FLLM120306	CO1	On successful completion of this course, you will be able to analyze the principles of laws.
	CO2	Demonstrate an advanced and integrated understanding of the political, social, historical, philosophical, and economic context of law.
	CO3	Engage in identification, articulation and critical evaluation of legal theory and the implications for policy.
	CO4	Critically analyze and research complex problems relating to law and legal theory and make reasoned and appropriate choices amongst alternatives.
Law & Social Transformation in India FLLM120307	CO1	Understanding the role of law in driving social change.
	CO2	Advocating for human rights and social equality.
	CO3	Analyzing legal frameworks for policy reforms.
	CO4	Engaging communities in social transformation effort.
BANKING LAW FLLM120308	CO1	To understand the various reforms in banking sector and will be updated with the knowledge of laws related to banking business in India.
	CO2	To be able to analyze the various laws related to banking business in India and will be able to understand the various banker-customer relations depending on the functions and banking transactions.
	CO3	To comprehend the various challenges and risks involved in the banking business such as NPAs and will be able to suggest overcoming from these challenges.
	CO4	To be well acquainted with the laws related to Foreign Exchange as banking business has grown and
INSURANCE LAW FLLM120309	CO1	Knowledge of conceptual and operational aspects of Insurance Law Principles.
	CO2	To analyze legal provisions and apply legal principles



		established through statute, precedent and customs in Insurance Law to real life cases.
	CO3	To draft clauses which can be incorporated into Insurance policies, recognizing different kinds of policies, insurance covers, requisite documentation and other legal procedures.
	CO4	To evaluate legal principles applicable to insurance contracts in India, in comparison with international
Judicial Process FLLM130311	CO1	To develop acquaintance with various theories of justice.
	CO2	Understanding of judgment writing skills.
	CO3	Use of various rules of Interpretation of statutes in dealing with the cases.
Principles of Human Rights FLLM130312	CO1	Understand the historical growth of the idea of human rights.
	CO2	Demonstrate an awareness of the international context of human rights.
	CO3	Demonstrate an awareness of the position of human rights in the UK prior to 1998.
	CO4	Understand the importance of the Human Rights Act 1998.
LEGAL REGULATION OF ECONOMIC ENTERPRISE FLLM130314	CO1	Attain a comprehensive understanding of the legal frameworks governing economic enterprises, exploring statutes, regulations, and judicial decisions that shape the operational landscape of businesses.
	CO2	Develop skills to ensure legal compliance within economic enterprises, focusing on corporate governance, regulatory adherence, and ethical practices to foster responsible and sustainable business operations.
	CO3	Acquire expertise in drafting, interpreting, and negotiating contracts relevant to economic enterprises, including agreements related to partnerships, mergers, acquisitions, and other transactions, ensuring students are adept in navigating contractual complexities.
	CO4	Cultivate the ability to identify, assess, and manage legal risks associated with economic enterprises,
CORPORATE FINANCE FLLM130315	CO1	Develop an analytical/practical approach to corporate fin decision making
	CO2	Apply & analyze the concepts in real life situations to positively influence corporate, society and environment.
	CO3	CO3. Compare and appraise various theories related to different concepts.



	CO4	Evaluate various theories related to different concepts and device optimum solutions for solving complex corporate problems within available resources.
THE INFORMATION TECHNOLOGY ACT, 2000 FLLM1304317	CO1	Analyze the legal framework of Information Technology laws.
	CO2	Understand basic concepts under Information Technology Act, 2000 such as digital signature, electronic signature. Ecommerce, governance etc.
	CO3	Examine the impact of Information Technology Act, 2000 on the Society.
	CO4	Explain various definitions, taxation schemes and working of Information Technology Act, 2000
DIRECT TAXATION FLLM140318	CO1	To understand the basic concepts
	CO2	computation of total income for individual and the tax liability
Dissertation FLLM140319	CO1	To gain familiarity with Legal phenomena.
	CO2	To discover new facts.
	CO3	To test and verify old facts.
	CO4	To analyze the facts into new theoretical framework.
	CO5	To disguise the weakness or merits of old legal aspects and analyze the effect of new legal system or law on society.



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ONE YEAR LL. M

Master of Law (One Year LL.M)

Batch 2022-23

Program Outcomes



- PO1 To develop critical thinking and logical legal arguments amongst students to enable them to understand in-depth knowledge of legal system and apply legal knowledge in legal problem solving and conflicting perspectives of their Specialization.
- PO2 To improve research aptitude in view of providing platform by undertaking research projects.
- PO3 To explore & apply the legal knowledge of their specialization in context.
- PO4 To provide a platform for the Students to become academicians and lifelong learners. And to Commit for professional ethics and responsibilities of the established legal field.
- PO5 To create an awareness and understanding of the ethical, social, political, and economic context in which the basic concepts, values, principles, and rules of the Legal System are competing. Through live projects students will be able to interpret and analyse the legal and social problems and find 7 solutions to those problems.
- PO6 To explore & apply the legal knowledge of their specialization in context.
- PO7 To provide a platform for the students to become academicians and lifelong learners. And to Commit for professional ethics and responsibilities of the established legal field.



Master of Law (LL.M)

Batch 2022-23

Program Specific Outcomes

- PSO1 Analytical learning of the legal and judicial system in India.
- PSO2 Application of Legal knowledge so acquired to solve the socio-legal problems of the society with emphasis on vulnerable sections of the society.
- PSO3 Identification of contemporary research areas relevant to the society and undertake such research for the benefit of the society.
- PSO4 Acquisition of advocacy skills, legal writing, management of time and court etiquette to argue in a logical manner.
- PSO5 Upholding of ethical and professional values in the practice of legal profession. To study law in the context of Humanities and Social Sciences to groom students to respond to governance, administration and Human behavior



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Master of Law (LL.M)
Batch 2022-23
Course Outcomes (CO)



Master of Law in Alternative Dispute Resolution		
Research Methods and Legal Writings FLLM110101	CO1	Learn the general principles in legal research and types of research
	CO2	Learn various legal research methods
	CO3	Understand the legal research processes and legal source Learn writing legal reports.
	CO4	Learn writing legal reports.
	CO5	Understand the contemporary trends in legal research in India.
Comparative Public Law FLLM110102	CO1	Identify, analyze and explain theoretical knowledge and understanding of the range of constitutional models throughout the world;
	CO2	Investigate, synthesize and critically evaluate the role and relevance of constitutional comparison;
	CO3	Interpret and critically examine contextually, the current trends towards protecting human rights in the U.S.A Canada & Australian legal systems, and in other legal systems;
	CO4	Identify, evaluate and review the accomplishments and shortcomings of the Indian constitutional system through a comparative lens; and
	CO5	Plan, design and execute a research project that identifies, critically examines and communicates comparative analysis to complex theoretical issues and practical problems in constitutional schemes, demonstrating relevant research principles and techniques
Clinical Paper-1 (Doctrinal, Non- doctrinal, Clinical Legal Research) FLLM110103	CO1	Demonstrate advanced proficiency in conducting comprehensive doctrinal legal research, providing well-grounded legal arguments grounded in principles, statutes, and case laws
	CO2	Showcase diverse approaches to non-doctrinal legal research, employing socio-legal, empirical, and interdisciplinary methods to explore legal issues from various perspectives and dimensions
	CO3	Exhibit applied competence in clinical legal research by effectively addressing real-world legal problems, engaging with clients, and demonstrating practical problem-solving



		skills within a legal context.
	CO4	Demonstrate clear and concise legal writing and communication skills, enabling effective communication of complex legal concepts to various audiences.
	CO5	Apply ethical standards and professional conduct in legal research, showcasing integrity, confidentiality, and a commitment to ethical practices within the legal profession.
Evolution, Concept and Development of Alternative Dispute Resolution (ADR). FLLM110104	CO1	Define and differentiate Alternative Dispute Resolution (ADR) from traditional dispute resolution methods.
	CO2	Understand the historical evolution of ADR and its emergence as a distinct field.
	CO3	Identify and analyze key ADR processes such as mediation, arbitration, negotiation, and conciliation.
	CO4	Evaluate the strengths and weaknesses of each ADR method.
	CO5	Comprehend the legal framework governing ADR, including enforceability and admissibility of outcomes.
Law of Arbitration FLLM110105	CO1	Analyze the ethical considerations and responsibilities associated with ADR practices.
	CO2	Develop and demonstrate effective communication, negotiation, and mediation skills in ADR scenarios.
	CO3	Apply theoretical knowledge to real-world case studies and simulated dispute resolution exercises.
	CO4	Critically assess the effectiveness of ADR in diverse contexts.
	CO5	Reflect on personal and societal attitudes toward ADR, considering its impact on justice and fairness.
International Commercial Arbitration FLLM110106	CO1	Demonstrate proficiency in analyzing and interpreting complex international commercial arbitration cases, identifying legal issues and applying relevant legal principles for effective dispute resolution.
	CO2	Evaluate various arbitration procedures and practices used in international commercial disputes, considering factors such as jurisdiction, choice of law, and the selection of arbitrators.
	CO3	Develop effective communication skills by drafting clear and concise arbitration agreements, pleadings, and awards, demonstrating an understanding of the importance of effective written and oral communication in the arbitration process.
	CO4	Navigate cross-cultural challenges in international commercial arbitration, acquiring the ability to recognize and address



		cultural nuances in legal proceedings.
	CO5	Apply ethical and professional standards in the context of international commercial arbitration, demonstrating an understanding of the responsibilities and obligations of arbitrators and legal practitioners involved in the process.
Law & Justice in Globalizing World FLLM120101	CO1	Understand the process of globalization and its impact on international as well as municipal law
	CO2	Analyze the concept and emerging issues of Law and Justice in globalizing world.
	CO3	Evaluate the effect of globalization on law and justice nationally and internationally.
	CO4	Analyze and suggest the reform in international law and working modalities of international institutions.
	CO5	Develop a comprehensive understanding of the legal implications and challenges arising from globalization, exploring the interconnectedness of legal systems and the pursuit of justice on a global scale.
Clinical Paper: 2 (Legal Aid & Teaching Practice) FLLM120102	CO1	Demonstrate proficiency in delivering legal aid services, integrating theoretical knowledge with practical skills while adhering to ethical standards.
	CO2	Apply effective teaching methodologies in legal education, creating an engaging and inclusive learning environment for students.
	CO3	Analyze and critique the socio-legal implications of legal aid, fostering a comprehensive understanding of its role in promoting justice.
	CO4	Evaluate legal aid policies and practices, proposing informed recommendations for improvements in legal advocacy.
	CO5	Integrate experiential learning from legal aid and teaching practice, demonstrating a holistic approach to legal education and community engagement.
Research Project Dissertation FLLM120103	CO1	Demonstrate proficiency in conducting independent research, showcasing advanced skills in problem formulation, data collection, and analysis.
	CO2	Produce a high-quality research dissertation, contributing original insights to the academic field and demonstrating mastery of the research process.
	CO3	Critically evaluate and synthesize existing literature,



		showcasing a deep understanding of the context and gaps in the chosen research area.
	CO4	Apply ethical considerations and methodological rigor in the research process, upholding the standards of academic integrity.
	CO5	Effectively communicate research findings through scholarly writing and oral presentations, showcasing the ability to disseminate knowledge within the academic community.
Law on Mediation, Conciliation and Negotiation FLLM120104	CO1	Student will be able to exhibit advanced knowledge of mediation, conciliation and negotiation as alternative methods of dispute settlement.
	CO2	Students will be able to identify legal difference between mediation, conciliation and negotiations alternative methods of dispute settlement.
	CO3	Student will be able to look forward to career options as a mediator, conciliation expert or negotiator.
Online Dispute Resolution (ODR) FLLM120105	CO1	Student will be able to have a nuanced understanding of ADR in terms of ODR.
	CO2	Students will be able to look forward to career prospects as an ODR experts
	CO3	Students will be able to look forward to initiate legal startups in the field of ODR.
	CO4	Students will develop practical skills in utilizing Online Dispute Resolution (ODR) platforms and tools, enhancing their proficiency in resolving disputes through digital means.
	CO5	Students will gain insights into the technological advancements and innovations shaping the landscape of ODR, staying abreast of the latest developments in this rapidly evolving field.
Family Dispute Resolution (FDR) FLLM120106	CO1	Demonstrate proficiency in applying family law principles to address legal aspects of family disputes, ensuring compliance with relevant regulations.
	CO2	Apply mediation and negotiation skills to facilitate constructive communication, resulting in effective resolution of family conflicts.
	CO3	Analyze and assess the emotional dynamics of family disputes, demonstrating the ability to navigate complex interpersonal relationships.



	CO4	Integrate ethical considerations and cultural competence into family dispute resolution practices, ensuring a fair and culturally sensitive approach.
	CO5	Function as competent Family Dispute Resolution practitioners, showcasing the ability to apply theoretical knowledge to real-world situations and contribute positively to the resolution of family conflicts.
Master of Law in Constitution and Administrative Law		
Research Methods and Legal Writings FLLM110201	CO1	Learn the general principles in legal research and types of research
	CO2	Learn various legal research methods
	CO3	Understand the legal research processes and legal source Learn writing legal reports.
	CO4	Learn writing legal reports.
	CO5	Understand the contemporary trends in legal research in India.
Comparative Public Law FLLM110202	CO1	Identify, analyze and explain theoretical knowledge and understanding of the range of constitutional models throughout the world;
	CO2	Investigate, synthesize and critically evaluate the role and relevance of constitutional comparison;
	CO3	Interpret and critically examine contextually, the current trends towards protecting human rights in the U.S.A Canada & Australian legal systems, and in other legal systems;
	CO4	Identify, evaluate and review the accomplishments and shortcomings of the Indian constitutional system through a comparative lens; and
	CO5	Plan, design and execute a research project that identifies, critically examines and communicates comparative analysis to complex theoretical issues and practical problems in constitutional schemes, demonstrating relevant research principles and techniques
Clinical Paper-1 (Doctrinal, Non- doctrinal, Clinical Legal Research) FLLM110203	CO1	Demonstrate advanced proficiency in conducting comprehensive doctrinal legal research, providing well-grounded legal arguments grounded in principles, statutes, and case laws
	CO2	Showcase diverse approaches to non-doctrinal legal research, employing socio-legal, empirical, and interdisciplinary methods to explore legal issues from various perspectives and



		dimensions
	CO3	Exhibit applied competence in clinical legal research by effectively addressing real-world legal problems, engaging with clients, and demonstrating practical problem-solving skills within a legal context.
	CO4	Demonstrate clear and concise legal writing and communication skills, enabling effective communication of complex legal concepts to various audiences.
	CO5	Apply ethical standards and professional conduct in legal research, showcasing integrity, confidentiality, and a commitment to ethical practices within the legal profession.
Centre State Relations and Constitutional Governance FLLM110204	CO1	Students will be able to analyze and interpret constitutional provisions related to Centre-State relations, demonstrating a comprehensive understanding of the constitutional framework.
	CO2	Participants will gain insight into the historical evolution of Centre-State relations, enabling them to contextualize contemporary governance issues.
	CO3	Students will acquire a nuanced understanding of legislative mechanisms, empowering them to navigate the complexities of lawmaking in the federal structure.
	CO4	Participants will be able to apply judicial precedents to analyze and resolve issues related to Centre-State relations, demonstrating proficiency in legal reasoning.
	CO5	Through the application of constitutional principles to real-world scenarios, students will develop critical thinking skills essential for effective governance within the federal system.
Fundamental Rights and Directive Principles of State Policy FLLM110205	CO1	Demonstrate an in-depth understanding of the constitutional foundations and historical context of Fundamental Rights and Directive Principles.
	CO2	Showcase analytical proficiency by critically analyzing legal cases and precedents related to Fundamental Rights, demonstrating a nuanced understanding of legal reasoning.
	CO3	Critically evaluate the societal impact of Fundamental Rights and Directive Principles, demonstrating an awareness of their role in shaping social and legal structures.
	CO4	Demonstrate proficient skills in interpreting constitutional texts related to Fundamental Rights and Directive Principles, applying legal doctrines accurately.



	CO5	Apply knowledge gained from Fundamental Rights and Directive Principles to propose well-founded solutions to contemporary legal and social issues, demonstrating practical application of legal principles.
Public Policy Development FLLM110206	CO1	CO1: Demonstrate an in-depth knowledge of the constitutional foundations and historical context of Fundamental Rights and Directive Principles.
	CO2	CO2: Showcase analytical proficiency by critically analyzing legal cases and precedents related to Fundamental Rights, demonstrating a nuanced understanding of legal reasoning.
	CO3	CO3: Critically evaluate the social impact of Fundamental Rights and Directive Principles, demonstrating an awareness of their role in shaping social structures and policies.
	CO4	CO4: Demonstrate proficient skills in interpreting and applying constitutional texts related to Fundamental Rights and Directive Principles, integrating legal doctrines effectively.
	CO5	CO5: Apply knowledge gained from Fundamental Rights and Directive Principles to propose well-founded solutions to contemporary legal and societal issues, demonstrating practical application of constitutional principles.
Law & Justice in Globalizing World FLLM120201	CO1	Understand the process of globalization and its impact on international as well as municipal law
	CO2	Analyze the concept and emerging issues of Law and Justice in globalizing world.
	CO3	Evaluate the effect of globalization on law and justice nationally and internationally.
	CO4	Analyze and suggest the reform in international law and working modalities of international institutions.
	CO5	Develop a comprehensive understanding of the legal implications and challenges arising from globalization, exploring the interconnectedness of legal systems and the pursuit of justice on a global scale.
Clinical Paper: 2 (Legal Aid & Teaching Practice) FLLM120202	CO1	Demonstrate proficiency in delivering legal aid services, integrating theoretical knowledge with practical skills while adhering to ethical standards.
	CO2	Apply effective teaching methodologies in legal education, creating an engaging and inclusive learning environment for



		students.
	CO3	Analyze and critique the socio-legal implications of legal aid, fostering a comprehensive understanding of its role in promoting justice.
	CO4	Evaluate legal aid policies and practices, proposing informed recommendations for improvements in legal advocacy.
	CO5	Integrate experiential learning from legal aid and teaching practice, demonstrating a holistic approach to legal education and community engagement.
Research Project Dissertation FLLM120203	CO1	Demonstrate proficiency in conducting independent research, showcasing advanced skills in problem formulation, data collection, and analysis.
	CO2	Produce a high-quality research dissertation, contributing original insights to the academic field and demonstrating mastery of the research process.
	CO3	Critically evaluate and synthesize existing literature, showcasing a deep understanding of the context and gaps in the chosen research area.
	CO4	Apply ethical considerations and methodological rigor in the research process, upholding the standards of academic integrity.
	CO5	Effectively communicate research findings through scholarly writing and oral presentations, showcasing the ability to disseminate knowledge within the academic community.
Administrative Law FLLM120204	CO1	Demonstrate proficiency in analyzing and interpreting administrative decisions and regulations, ensuring a comprehensive grasp of administrative legal processes.
	CO2	Apply knowledge of administrative law principles to real-world scenarios, demonstrating the ability to navigate legal challenges related to administrative actions.
	CO3	Critically assess the constitutional dimensions of administrative law, showcasing an understanding of the checks and balances inherent in administrative systems.
	CO4	Navigate administrative procedures with a practical understanding, ensuring students are equipped to address legal issues arising from governmental actions.
	CO5	Evaluate and propose reforms to enhance administrative justice, showcasing the ability to apply theoretical knowledge



		to contemporary administrative law challenges.
Local Self Government and Federal Governance FLLM120205	CO1	Demonstrate proficiency in understanding the principles and structures of local self-government and federal governance systems.
	CO2	Apply analytical skills to assess the functions and roles of local government units within the broader federal context.
	CO3	Critically analyze and interpret the constitutional and legal dimensions of federal governance, showcasing a nuanced understanding of power distribution.
	CO4	Navigate practical challenges within local self-government, demonstrating the ability to address complex issues arising within the federal governance framework.
	CO5	Evaluate and propose reforms for effective governance, showcasing the ability to apply theoretical knowledge to contemporary issues in local self-government and federalism.
Police and Security Administration FLLM120206	CO1	Demonstrate proficiency in understanding the principles and functions of police and security administration.
	CO2	Apply analytical skills to assess and implement effective security measures, ensuring a proactive approach to addressing security challenges.
	CO3	Critically analyze and apply legal and ethical considerations in police and security operations, upholding constitutional rights and community welfare.
	CO4	Apply theoretical knowledge to real-world scenarios, showcasing the ability to implement crime prevention strategies effectively.
	CO5	Evaluate and propose innovative approaches to policing and security, demonstrating the ability to address emerging trends for enhanced public safety
Master of Law in Criminal Security Law		
Research Methods and Legal Writings FLLM110301	CO1	Learn the general principles in legal research and types of research
	CO2	Learn various legal research methods
	CO3	Understand the legal research processes and legal source Learn writing legal reports.
	CO4	Learn writing legal reports.
	CO5	Understand the contemporary trends in legal research in India.
Comparative Public	CO1	Identify, analyze and explain theoretical knowledge and



Law FLLM110302		understanding of the range of constitutional models throughout the world;
	CO2	Investigate, synthesize and critically evaluate the role and relevance of constitutional comparison;
	CO3	Interpret and critically examine contextually, the current trends towards protecting human rights in the U.S.A Canada & Australian legal systems, and in other legal systems;
	CO4	Identify, evaluate and review the accomplishments and shortcomings of the Indian constitutional system through a comparative lens; and
	CO5	Plan, design and execute a research project that identifies, critically examines and communicates comparative analysis to complex theoretical issues and practical problems in constitutional schemes, demonstrating relevant research principles and techniques
Clinical Paper-1 (Doctrinal, Non- doctrinal, Clinical Legal Research) FLLM110303	CO1	Demonstrate advanced proficiency in conducting comprehensive doctrinal legal research, providing well-grounded legal arguments grounded in principles, statutes, and case laws
	CO2	Showcase diverse approaches to non-doctrinal legal research, employing socio-legal, empirical, and interdisciplinary methods to explore legal issues from various perspectives and dimensions
	CO3	Exhibit applied competence in clinical legal research by effectively addressing real-world legal problems, engaging with clients, and demonstrating practical problem-solving skills within a legal context.
	CO4	Demonstrate clear and concise legal writing and communication skills, enabling effective communication of complex legal concepts to various audiences.
	CO5	Apply ethical standards and professional conduct in legal research, showcasing integrity, confidentiality, and a commitment to ethical practices within the legal profession.
CRIMINOLOGY, PENENOLOGY & VICTIMOLOGY FLLM110304	CO1	Apply various criminological theories to analyze and explain real-world criminal behavior and patterns.
	CO2	Evaluate correctional policies and their impact on individuals and society, considering rehabilitation and alternative sentencing.



	CO3	Advocate for victim rights by understanding victimology concepts and supporting victims through the criminal justice process.
	CO4	Understand legal responses to crime, including the role of law enforcement, courts, and correctional facilities in maintaining public safety.
	CO5	Propose restorative justice solutions by applying victimology principles to enhance the treatment and support of crime victims within the criminal justice system.
Criminal Justice and human Rights FLLM110305	CO1	Demonstrating an applied understanding of the intersections between criminal justice and human rights within legal frameworks.
	CO2	Critically evaluating criminal justice processes, ensuring adherence to human rights standards throughout investigation, prosecution, and sentencing.
	CO3	Acquiring in-depth knowledge of international human rights standards, treaties, and mechanisms applicable to criminal justice.
	CO4	Identifying and addressing instances of human rights abuses within criminal justice, developing strategies for prevention and redress.
	CO5	Advocating for the integration of human rights principles within criminal justice systems, proposing reforms for a more equitable and rights-respecting approach.
Police Law and Administration FLLM110306	CO1	Demonstrate a nuanced understanding of the legal foundations governing police activities, ensuring compliance with legal and ethical standards.
	CO2	Evaluate the impact of law and legal processes on police practices, fostering a commitment to ethical conduct and community-oriented policing.
	CO3	Apply procedural knowledge to conduct lawful and rights-respecting investigations, balancing law enforcement objectives with individual liberties.
	CO4	Critically analyze and propose solutions to challenges in police administration, considering leadership, organizational dynamics, and community engagement.
	CO5	Implement legal and administrative principles in practical scenarios, promoting responsible and effective law



		enforcement practices that align with community expectations and legal requirements.
Law & Justice in Globalizing World FLLM120301	CO1	Understand the process of globalization and its impact on international as well as municipal law
	CO2	Analyze the concept and emerging issues of Law and Justice in globalizing world.
	CO3	Evaluate the effect of globalization on law and justice nationally and internationally.
	CO4	Analyze and suggest the reform in international law and working modalities of international institutions.
	CO5	Develop a comprehensive understanding of the legal implications and challenges arising from globalization, exploring the interconnectedness of legal systems and the pursuit of justice on a global scale.
Clinical Paper: 2 (Legal Aid & Teaching Practice) FLLM120302	CO1	Demonstrate proficiency in delivering legal aid services, integrating theoretical knowledge with practical skills while adhering to ethical standards.
	CO2	Apply effective teaching methodologies in legal education, creating an engaging and inclusive learning environment for students.
	CO3	Analyze and critique the socio-legal implications of legal aid, fostering a comprehensive understanding of its role in promoting justice.
	CO4	Evaluate legal aid policies and practices, proposing informed recommendations for improvements in legal advocacy.
	CO5	Integrate experiential learning from legal aid and teaching practice, demonstrating a holistic approach to legal education and community engagement.
Research Project Dissertation FLLM120303	CO1	Demonstrate proficiency in conducting independent research, showcasing advanced skills in problem formulation, data collection, and analysis.
	CO2	Produce a high-quality research dissertation, contributing original insights to the academic field and demonstrating mastery of the research process.
	CO3	Critically evaluate and synthesize existing literature, showcasing a deep understanding of the context and gaps in the chosen research area.
	CO4	Apply ethical considerations and methodological rigor in the



		research process, upholding the standards of academic integrity.
	CO5	Effectively communicate research findings through scholarly writing and oral presentations, showcasing the ability to disseminate knowledge within the academic community.
Drug Addiction and Crime FLLM120304	CO1	Demonstrate proficiency in understanding the complex relationships between drug addiction and criminal behavior.
	CO2	Apply analytical skills to assess the multifaceted impact of drug addiction on crime, recognizing the interconnected nature of these phenomena.
	CO3	Critically analyze and interpret legal dimensions, policies, and challenges related to drug-related crimes and the criminal justice system.
	CO4	Apply theoretical knowledge to design and implement effective rehabilitation and intervention strategies for individuals affected by drug addiction.
	CO5	Evaluate and contribute to evidence-based practices in drug addiction prevention and intervention, showcasing a comprehensive understanding of current research and trends.
Corporate Crimes/White Collar Crimes FLLM120305	CO1	Demonstrate proficiency in understanding the multifaceted nature of corporate crimes and white-collar offenses.
	CO2	Apply analytical skills to assess the motives, methods, and implications of white-collar crimes within corporate environments.
	CO3	Critically analyze and interpret regulatory frameworks, showcasing an understanding of legal responses and enforcement mechanisms.
	CO4	Apply theoretical knowledge to design and implement preventive measures and compliance strategies against corporate crimes.
	CO5	Evaluate and propose reforms for effective corporate governance, demonstrating the ability to apply theoretical knowledge to contemporary issues in corporate crimes
Law of Juvenile Delinquency FLLM120306	CO1	Demonstrate proficiency in understanding the legal principles and frameworks governing juvenile delinquency.
	CO2	Apply analytical skills to assess the socio-economic factors influencing juvenile delinquency and the efficacy of rehabilitative interventions.



	CO3	Critically analyze and interpret constitutional and ethical considerations, showcasing an understanding of the rights and protections for young offenders.
	CO4	Apply theoretical knowledge to navigate legal challenges within the juvenile justice system, ensuring effective advocacy for juvenile offenders.
	CO5	Evaluate and contribute to contemporary issues and reforms in the law of juvenile delinquency, demonstrating a comprehensive understanding of evolving juvenile justice policies.
Master of Law in Intellectual Property Law		
Research Methods and Legal Writings FLLM110401	CO1	Learn the general principles in legal research and types of research
	CO2	Learn various legal research methods
	CO3	Understand the legal research processes and legal source Learn writing legal reports.
	CO4	Learn writing legal reports.
	CO5	Understand the contemporary trends in legal research in India.
Comparative Public Law FLLM110402	CO1	Identify, analyze and explain theoretical knowledge and understanding of the range of constitutional models throughout the world;
	CO2	Investigate, synthesize and critically evaluate the role and relevance of constitutional comparison;
	CO3	Interpret and critically examine contextually, the current trends towards protecting human rights in the U.S.A Canada & Australian legal systems, and in other legal systems;
	CO4	Identify, evaluate and review the accomplishments and shortcomings of the Indian constitutional system through a comparative lens; and
	CO5	Plan, design and execute a research project that identifies, critically examines and communicates comparative analysis to complex theoretical issues and practical problems in constitutional schemes, demonstrating relevant research principles and techniques
Clinical Paper-1 (Doctrinal, Non- doctrinal, Clinical Legal Research)	CO1	Demonstrate advanced proficiency in conducting comprehensive doctrinal legal research, providing well-grounded legal arguments grounded in principles, statutes, and case laws



Research Methods and Legal Writings FLLM110403	CO2	Showcase diverse approaches to non-doctrinal legal research, employing socio-legal, empirical, and interdisciplinary methods to explore legal issues from various perspectives and dimensions
	CO3	Exhibit applied competence in clinical legal research by effectively addressing real-world legal problems, engaging with clients, and demonstrating practical problem-solving skills within a legal context.
	CO4	Demonstrate clear and concise legal writing and communication skills, enabling effective communication of complex legal concepts to various audiences.
	CO5	Apply ethical standards and professional conduct in legal research, showcasing integrity, confidentiality, and a commitment to ethical practices within the legal profession.
Law of Copyright, Industrial Design & Electronic Circuit Design FLLM110404	CO1	Demonstrate a nuanced understanding of copyright laws and their application to protect and manage intellectual property in creative endeavors.
	CO2	Evaluate and apply legal principles to industrial design, ensuring effective protection and management of design innovations.
	CO3	Navigate the legal complexities of electronic circuit design, including patent considerations, licensing, and protection of intellectual property.
	CO4	Integrate knowledge from copyright, industrial design, and electronic circuit design to address legal challenges in multidisciplinary projects.
	CO5	Apply legal frameworks to make informed decisions in the creation, protection, and management of intellectual property in the context of diverse design and technology projects.
Law of Patent & Technology Transfer FLLM110405	CO1	Patent Law Fundamentals: Gain a solid understanding of patent laws, covering principles, statutes, and case laws.
	CO2	Technology Transfer Application: Learn to apply patent laws to technology transfer, developing skills in drafting and negotiating agreements.
	CO3	Intellectual Property in Emerging Technologies: Analyze intellectual property issues in cutting-edge fields like AI, biotech, and blockchain.
	CO4	Effective Legal Communication: Enhance communication



		skills for articulating complex legal concepts and preparing patent applications.
	CO5	Ethical Considerations in Tech Transactions: Explore ethical dimensions of patent law and tech transfer, emphasizing responsible and balanced practices.
International Perspective & Advance Laws of IPR FLLM110406	CO1	Demonstrate a nuanced understanding of international intellectual property frameworks and their implications for global innovation and trade.
	CO2	Critically evaluate and apply advanced legal concepts in intellectual property, ensuring effective protection and management of intellectual assets.
	CO3	Assess the global impact of intellectual property laws on diverse industries and formulate strategies to address emerging challenges.
	CO4	Apply specialized knowledge to negotiate and draft intellectual property agreements, facilitating technology transfer and licensing.
	CO5	Synthesize advanced legal principles to propose solutions to complex issues in international intellectual property, demonstrating expertise in the field
Law & Justice in Globalizing World FLLM120401	CO1	Understand the process of globalization and its impact on international as well as municipal law
	CO2	Analyze the concept and emerging issues of Law and Justice in globalizing world.
	CO3	Evaluate the effect of globalization on law and justice nationally and internationally.
	CO4	Analyze and suggest the reform in international law and working modalities of international institutions.
	CO5	Develop a comprehensive understanding of the legal implications and challenges arising from globalization, exploring the interconnectedness of legal systems and the pursuit of justice on a global scale.
Clinical Paper: 2 (Legal Aid & Teaching Practice) FLLM120402	CO1	Demonstrate proficiency in delivering legal aid services, integrating theoretical knowledge with practical skills while adhering to ethical standards.
	CO2	Apply effective teaching methodologies in legal education, creating an engaging and inclusive learning environment for students.



	CO3	Analyze and critique the socio-legal implications of legal aid, fostering a comprehensive understanding of its role in promoting justice.
	CO4	Evaluate legal aid policies and practices, proposing informed recommendations for improvements in legal advocacy.
	CO5	Integrate experiential learning from legal aid and teaching practice, demonstrating a holistic approach to legal education and community engagement.
Research Project Dissertation FLLM120403	CO1	Demonstrate proficiency in conducting independent research, showcasing advanced skills in problem formulation, data collection, and analysis.
	CO2	Produce a high-quality research dissertation, contributing original insights to the academic field and demonstrating mastery of the research process.
	CO3	Critically evaluate and synthesize existing literature, showcasing a deep understanding of the context and gaps in the chosen research area.
	CO4	Apply ethical considerations and methodological rigor in the research process, upholding the standards of academic integrity.
	CO5	Effectively communicate research findings through scholarly writing and oral presentations, showcasing the ability to disseminate knowledge within the academic community.
Business Aspects of IPR: Trade Mark, Trade Secret, etc FLLM120404	CO1	Develop a comprehensive understanding of the business implications associated with intellectual property rights, focusing on trademarks, trade secrets, and related aspects.
	CO2	Equip students with the knowledge and skills to strategically manage intellectual property in a business context, fostering innovation and protecting proprietary assets.
	CO3	Analyze and evaluate the economic impact of trademarks, trade secrets, and other intellectual property components on business operations and market competitiveness.
	CO4	Demonstrate the ability to apply legal and business principles to effectively address challenges related to intellectual property rights in the context of business transactions.
	CO5	Cultivate a practical perspective on integrating intellectual property strategies into overall business planning, fostering sustainable growth and ethical business practices.



Law of Biodiversity, Traditional Knowledge & Geographical Indication FLLM120405	CO1	Understand the importance of Biodiversity, Traditional Knowledge and Geographical Indication
	CO2	Learn to protect the biotech and plant related inventions and issues
	CO3	Come out with solutions how to save the biodiversity and traditional knowledge
	CO4	Develop the ability to critically assess and address legal and ethical challenges related to biodiversity, traditional knowledge, and geographical indications, fostering a comprehensive understanding of their significance.
	CO5	Demonstrate proficiency in formulating and implementing strategies for the sustainable conservation and responsible use of biodiversity and traditional knowledge, contributing to environmental and cultural preservation.
Social Aspects of IPR FLLM120406	CO1	Understand the stand of IPR in social aspects
	CO2	Recognize the social issues related to IPR
	CO3	Identify the wide effect of IPR on society at large.
	CO4	Analyze the ethical implications of intellectual property rights (IPR) within the social context, considering the broader impact on cultural practices, access to information, and societal values.
	CO5	Develop the ability to propose and evaluate solutions to address social issues arising from IPR, emphasizing equitable access, cultural diversity, and ethical considerations for the benefit of the larger community.



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GLOBAL
UNIVERSITY**

Approved By Govt. of Gujarat
(Recognized by UGC under Section 22 & 21(i) of 1956)
(Gujarat Private State University Act 4 of 2018)

COURSE OUTCOMES

FACULTY OF LAW



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B.A.M.S

Bachelor Of Ayurvedic Medicine
and Surgery (B.A.M.S)

Program Outcomes (PO)



PROGRAMME OUTCOMES (POs)

A student upon successful completion of Bachelor's degree in Ayurveda should be able to

1. Recognize the importance of Ayurvedic principles in the context of the health needs of the community.
2. To be able to diagnose and manage acute and chronic diseases on the basis of clinical assessment and appropriately selected and conducted investigations.
3. To be able to critically analyze relevant published research literature and use them appropriately to influence the practice of Ayurveda.



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B.A.M.S

Bachelor Of Ayurvedic Medicine
and Surgery(B.A.M.S)
Program Specific Outcomes (PSO)



PROGRAMME SPECIFIC OUTCOMES (PSOs)

1. To create knowledge about core areas related to the field of Ayurveda.
2. To apply their knowledge of basic principles of Ayurveda including Anatomy, Physiology, Pathology, Drug identification and preparation, Clinical examination and various disciplines.
3. To apply recent advancements in Ayurveda and related knowledge of Modern medical science.
4. To apply the principles of Ayurveda for successful treatment of patients and health upliftment of the society.



B.A.M.S

Bachelor Of Ayurvedic Medicine
and Surgery(B.A.M.S)
Course Outcomes (CO)



On completion of the course, the students will be able to :

Course outcome -I B.A.M.S		
Subject with code		Course outcome
PADARTHA VIJANAM AyUG-PV	CO1	To understand the fundamental concepts of Ayurveda.
	CO2	Explain Philosophical foundation of Ayurveda, Principles (Siddhantha) of Darshana along with their similarities and relevance in Ayurveda and contemporary sciences.
	CO3	Analyse and interpret Padartha (Prameya) in Darshana and Ayurveda, Recognize their applications in Ayurveda.
	CO4	Distinguish, analyse and apply concept of Pramana shastra (Epistemology) in Darshana and Ayurveda. Demonstrate their applications in Ayurveda.
	CO5	Analyse and apply concept of Karya Karana Bhava in Ayurveda.
Samhita Adhyayan 1 AyUG-SA1	CO1	Distinguish the different <i>Samhitas</i> , their importance and methodology and familiarize with the tools of <i>Samhita Adhyayan</i> . (eg: <i>tantrayukti</i>)
	CO2	Interpret and apply the <i>sutras</i> from the <i>Samhitas</i> .
	CO3	Apply and evaluate the <i>Tridosha</i> , <i>Saptadhatu</i> and <i>Mala</i> principles (theory).
	CO4	Practice and prescribe <i>Dincharya</i> (daily regimen), <i>Ritucharya</i>



		(seasonal regimen) and dietary principles for preservation of health.
	C05	Explore and distinguish different types of food, food groups and medicinal <i>dravyas</i> mentioned in <i>Samhitas</i> .
	C06	Identify various etiopathological factors and predict different treatment principles
	C07	Recognize and explain the fundamentals behind various therapeutics (<i>Shodhan</i> and allied) and parasurgical therapies.
	C08	Develop a code of behavior and show mature behaviour in particular to the scientific deliberations
Rachana Sharir (Human Anatomy) AyUG-RS	CO1	Describe the fundamentals of Rachana Sharir, interpret and analyze it in relevant context and recognize its significance in Ayurveda
	CO2	Explain Garbha Sharir and Embryology in Ayurveda and modern science respectively with clinical significance
	CO3	Describe and demonstrate all the bones and joints with attachments of associated structures and its clinical application
	CO4	Identify the Marmas and understand its classification along with its importance in preventive and therapeutic aspect
	C05	Explain and demonstrate the gross anatomy of the organs of various systems and their applied anatomy in perspective of Ayurveda and Modern science
	C06	Respect the cadaver and perform dissection with commitment to reiterate the theoretical aspect of Ayurved Rachana Sharir and contemporary sciences



Kriya Sharir AyUG KS	CO1	Explain all basic principles & concepts of Kriya Sharir along with essentials of contemporary human physiology and biochemistry related to all organ systems
	CO2	Differentiate between Prakriti and Vikriti in the individuals after carrying out relevant clinical examinations.
	CO3	Carry out clinical examination and experiments using equipments with interpretation of their results
	CO4	Differentiate the strengths & limitations of Ayurved and contemporary sciences
	CO5	Show a sense of curiosity and questioning attitude towards the life processes and to display compassion and ethical behaviour
	CO6	Present a short project work / research activity covering the role of Kriya Sharir in preventive and promotive healthcare
	CO7	Effectively communicate verbally and in writing preferably using Ayurvedic terminology along with contemporary terminology among peers, teachers and community
	CO3	Discriminate and interpret the Cases & meanings (संभाषणार्थ) used in various verses of Ayurveda texts
CO4	Formulate the Prose order (श्लोकानुवृत्तः) of Slokas/Sutras in Ayurveda Textbooks (ग्रन्थ) to derive the meaning (श्लोकार्थ), to determine the Scientific Meaning (वैज्ञानिकार्थ) and to Translate (Regional or other language).	



SANSKRIT AND HISTORY OF AYURVEDA AyUG-SN & AI	CO1	Read and recite Prose (संस्कृतः) and poem (श्लोकः) with the appropriate accent
	CO2	Apply various Technical Terms in Ayurveda (आयुर्वेदशब्दावली), Nouns & Pronouns (संज्ञासूत्रम्), Verbs (कृत्सूत्रम्), suffixes (प्रत्ययसूत्रम्), Grammatical Terms (व्याकरणशब्दावली), Syntax (संज्ञासूत्रम्) and Compounds (संज्ञासूत्रम्) from Sanskrit Grammar for enhanced interpretation of Ayurveda texts
	CO3	Discriminate and interpret the Cases & meanings (संज्ञासूत्रम्) used in various verses of Ayurveda texts
	CO4	Formulate the Prose order (संस्कृतः) of Slokas/Sutras in Ayurveda Textbooks (आयुर्वेदशब्दावली) to derive the meaning (आयुर्वेदशब्दावली), to determine the Scientific Meaning (आयुर्वेदशब्दावली) and to Translate (Regional or other language).
	CO5	Interpret the Synonyms and Derivations of Ayurveda
	CO6	Speak, Write and Summarize and Express in Samskrit

Course outcome -II B..A.M.S		
Subject with code		Course outcome
Agad Tantra evam	CO1	Demonstrate application of fundamental concepts of Agada Tantra, Vyavahara Ayurveda and Vidhi vaidyaka in real life situations.
	CO2	Diagnose and manage acute and chronic poisoning due to Sthavara,



Vidhi Vaidyaka AyUG-AT		Jangamaand Kritrima visha along with their contemporary relevance.
	CO3	Demonstrate application of concepts of Dushivisha, Garavisha and Viruddhaahara in prevention, diagnosis and management of diseases.
	CO4	Demonstrate application of principles of Agada Tantra and therapeutic administration of common Agada yoga and Visha dravya in Clinical practice.
	CO5	Appreciate research updates in relevance to Agada Tantra and apply for healthcare promotion and social awareness.
	CO6	Demonstrate application of professional skills of Forensic Medicine in handling medico legal issues.
	CO7	Demonstrate professional and ethical behavior in discharging the medico-legal duties and responsibilities in abidance to the law.
	Dravyaguna Vigyan AyUG-DG	CO1
CO2		Analyze and justify the fundamental principles of <i>Dravyaguna</i> in relevance to contemporary sciences.
CO3		Analyze and interpret <i>Rasa Panchaka</i> of <i>Dravya</i> with their application in clinical practice.
CO4		Interrelate the knowledge on Karma (pharmacological actions) with <i>Rasa panchaka</i> and basic contemporary clinical pharmacology.



Rasashastra evam Bhaishajyakalpana AyUG-RB	CO1	Demonstrate application of principles of Ayurvediya Aushadhi Nirmana (Ayurvedic Pharmaceutics)
	CO2	Demonstrate application of principles of Ayurvediya Aushadhi Prayoga Vigyana (Clinical Pharmacology)
	CO3	Prepare Ayurvedic formulations in adherence to quality control parameters for raw materials, in-process and finished products
	CO4	Justify rationality of selection and administration of Ayurvedic formulations
	CO5	Demonstrate application of ethical, legal and regulatory aspects of manufacturing and sale of Ayurvedic formulations.
	CO6	Appraise research in current and emerging trend in Ayurvedic pharmaceuticals and allied sciences.
Samhita Adhyayan-2 AyUG-SA2	CO1	Justify the Methodology of structuring samhitas and appraise the importance of tools of decoding Charakasamhita (Tantrayukti and vyakhyana)
	CO2	Relate and interpret various references of concepts in Charaka samhita
	CO3	Explain and interpret biological factors and their measurements in the manifestation of diseases.
	CO4	Explain and utilize various siddhantas in different dimensions of clinical practice.
	CO5	Demonstrate the knowledge of dravya and adravya based therapeutics.



	CO6	Explore the determinants of health in the background of Charaka samhita.
	CO7	Develop ethical professional and moral codes and conducts as a physician.
Swasthavritta evam Yoga AyUG-SW	CO1	Demonstrate application of principles of Swasthavritta in lifestyle modifications.
	CO2	Assess the health status and advise preventive & promotive measures according to Ayurveda principles
	CO3	Demonstrate and advise Yoga and Naturopathy as health promotive and disease preventive regimen
	CO4	Explain and utilize various siddhantas in different dimensions of clinical practice.
	CO5	Understand and apply the principles and components of primary health care and health policies to achieve the goal of health for all
	CO6	Advocate and propagate preventive principles of Ayurveda and contemporary sciences through Information, Education and Communication (IEC)
	CO7	Demonstrate skills and research aptitude for the promotion of health and prevention of diseases
Roga Nidan evam Vikriti Vigyan AyUG-RN	CO1	Identify the morbidities in accordance with principles of Ayurveda pathology (vikriti vigyan siddhanta)
	CO2	Describe the basic, general, and systemic pathological process thereby applying it in reaching a diagnosis
	CO3	Perform appropriate clinical examination (pareeksha) utilizing



		Ayurveda and contemporary principles (samakalina siddhanta)
	CO4	Order and interpret various diagnostic laboratory investigations and imaging
	CO5	Follow and advise advancements in diagnosis (vyadhi vinischaya) and prognosis (sadhya asadhyata) in clinical practice (naidanika adhyayana)
	CO6	Communicate effectively with the patient (rugna), relatives (bandhujan) and other stakeholders (anya hita dhaaraka)
	CO7	Demonstrate ethics (sadvritta), compassion (karuna) and possess qualities of a clinician (vaidya guna)

Course outcome -III B.A.M.S

Subject with code		Course outcome
PRASUTI TANTRA EVUM STRI ROGA FAB130103	CO1	Develop skills to examine a pregnant woman, assess labour progress & anticipate complications and management.
	CO2	Observe Puerperal changes and disorders of puerperium with management by Ayurvedic or integrative approach as per the need
	CO3	Develop skills to identify Obstetric Emergencies and timely referral to higher centre
	CO4	Develop skills to practice Ayurveda treatment modalities in Gynaecological conditions
	CO5	Develop good communication skills which will help to seek appropriate medical attention



	CO6	Valuing high moral and ethical standards while history taking and examination
KAUMARBHRITYA (Ayurvedic Pediatrics) FAB130104	CO1	Manage the pediatric patient as per the principles of Ayurveda
	CO2	Promote Child Health in the Society as per Ayurvedic Principles
	CO3	Identification of problems suffered by Children and their remedies
CHARAK SAMHITA- UTTARARDHA FAB130105	CO1	Realize theoretical concepts of evidence-based practice.
	CO2	Understanding and Implementation of basic principles of Ayurveda in day-to-day practice.
	CO3	Comprehend the causation theory in every aspect of life including normal & abnormal conditions in human body.
	CO4	Evaluate the critical analysis of Chikitsa Sutra
KAYACHIKITSA FAB140101	CO1	The student will be able to understand and interpret Chikitsa Siddhanth based on various Samhitas
	CO2	The student will be able to interpret Lab Data and Clinical findings to arrive at Diagnosis
	CO3	Identify and Manage common Diseases
PANCHAKARMA FAB140102	CO1	Illustrate the scope and utility of Ayurveda
	CO2	Explain Panchakarma Procedure of Ayurveda, Principles (Siddhantha) relevance in



		Ayurveda and contemporary sciences.
	CO3	Analyse and apply concept of Panchakarma and Physiotherapy in Ayurveda.
	CO4	Demonstrate competencies/skills to patients undergoing treatment for medical-surgical disorders.
SHALYA TANTRA FAB140103	CO1	Illustrate the scope and utility of Shalya Tantra
	CO2	Explain Shalya Tantra of Ayurveda, Principles (Siddhantha) relevance in Ayurveda and contemporary sciences.
	CO3	Analyse and apply concept of Shalya Tantra in Ayurveda
	CO4	Understanding the management of diseases in Shalya Tantra
SHALAKYA TANTRA FAB140104	CO1	Illustrate the scope and utility of Shalakyia Tantra in Ayurveda
	CO2	Explain Procedures of Shalakyia of Ayurveda, Principles (Siddhantha) relevance in Ayurveda and contemporary sciences.
	CO3	Analyse and apply concept of Shalakyia in Ayurveda.
	CO4	Understanding the management of diseases in Shalakyia Tantra
RESEARCH METHODOLOGY FAB140105	CO1	Develop the ability to apply the methods while working on a research project work



	CO2	Describe the appropriate statistical methods required for a particular research design
	CO3	Choose the appropriate research design and develop appropriate research hypothesis for a research project
	CO4	Develop a appropriate framework for research studies



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Gokul Homoeopathy Medical College

B.H.M.S.

Bachelor of Homoeopathic Medicine &
Surgery (B.H.M.S.) Batch 2022-23

Program Outcomes (PO)



Students of all undergraduate Homoeopathy degree programs at the time of graduation will be able to learn:

PO 1: primary health care

Student will develop the competencies essential for primary health care in clinical diagnosis and treatment of diseases through the judicious application of homoeopathic principles

PO 2: scope and limitation of homoeopathy

Student will recognize the scope and limitation of homoeopathy and to apply the Homoeopathic Principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community.

PO 3: clinical emergencies

Student will discern the relevance of other systems of medical practice for rational use of cross referral and life saving measures, so as to address clinical emergencies

PO 4: critical thinking and research aptitude

Student will develop capacity for critical thinking and research aptitude as required for evidence based homoeopathic practice.

PO 5: develop competencies

Student will demonstrate aptitude for lifelong learning and develop competencies as and when conditions of practice demand.

PO 6: practice homoeopathy as per the medical ethics

Student will be competent enough to practice homoeopathy as per the medical ethics and professionalism.

PO 7: communication skills

Student will develop the necessary communication skills to work as a team member in various healthcare setting and contribute towards the larger goals of national policies such as school health, community health, environmental conservation.

PO 8: Knowledge about health and disease

Student will identify and respect the socio-demographic, psychological, cultural, environmental & economic factors that affect health and disease and plan homoeopathic intervention to achieve the sustainable development Goal.



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Gokul Homoeopathy Medical College

B.H.M.S.

Bachelor of Homoeopathic Medicine
& Surgery (B.H.M.S.) Batch 2022-23
Program Specific Outcomes (PSO)



Students after the completion of graduation in degree Homoeopathy programs able to:

PSO 1: Be competent to use homoeopathic medicines scientifically for health problems in preventive, promotive, curative palliative and rehabilitative mode.

PSO 2: Appreciate the rationale for the use of different therapeutic modalities & engage in cross-referral when required in the interest of the patient.

PSO 3: Be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop a humane attitude towards patients in discharging professional responsibilities.

PSO 4: Be able to identify community health problems and learn to work to resolve these by understanding, designing, instituting corrective steps as per homoeopathic principles and evaluating outcome of such measures. .



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Gokul Homoeopathy Medical College

B.H.M.S.

**Bachelor of Homoeopathic Medicine & Surgery
(B.H.M.S.) Batch 2022-23
Course Outcomes (CO)**



Students of all undergraduate Homoeopathy degree programs at the time of graduation will be able to learn:

Course Outcomes of 1st B.H.M.S.		
Subject with code		Course Outcome
Human Anatomy	CO1	Discuss the evolution of life and the developmental anatomy and genetics of human.
	CO2	Explain the ethics of Anatomy, such as Anatomy act, Body donation & receiving procedure and its legal aspects, develop respect to the human cadaver.
	CO3	Differentiate the structural organization of man from micro to macro and its evolution from embryo
	CO4	Correlate the structural organization of man with functional organization and its applied aspect
	CO5	Apply anatomy knowledge to achieve vertical integration with clinical subjects
	CO6	Correlate structural organization of man with homeopathic philosophy and concept of man, Homoeopathic Materia Medica, Repertory and Pharmacy.
	CO7	Correlate structural organization in interpreting different investigations
Human physiology & Biochemistry	CO1	Discuss the Homoeopathic concept of health in relation to integrated body structure and functions.
	CO2	Explain the normal functioning of the human body at all levels of organization.
	CO3	Relate the concept of homeostasis with relevant ideas in Anatomy, Materia medica and Organon of Medicine at BHMS I level.
	CO4	Elucidate the physiological aspects of normal growth and development with focus on evolution
	CO5	Correlate micro functions at cellular level with macro functions at organ-system level.
	CO6	Use necessary communication skills required for history-taking of the patient & relating various clinical findings in the patient.
	CO7	Perform experiments in haematology, clinical physiology & biochemistry as required for the study of physiological phenomena and for assessment of normal function.
	CO8	Identify the normal values of haematology, clinical physiology & biochemistry
	CO9	Perform clinical – physiological examination under supervision.
	CO10	Correlate knowledge of Organon & Materia Medica with Physiology.



	CO11	Explain the integrated responses of the organ systems of the body to physiological and pathological stresses.
Homoeopathic Pharmacy	CO1	Explain the principles that govern homoeopathic pharmacy.
	CO2	Discuss the pharmacognosical basis of homoeopathic drugs with respect to their identification, nomenclature, source, part used, method of collection and preparation.
	CO3	Prepare homoeopathic medicines from their respective sources according to the different scales & methods of potentisation on a small scale in the laboratory
	CO4	Describe the pharmacology of homoeopathic drugs with respect to the types of drug action, sphere of action and pharmacological action of homoeopathic drugs integrated with Homoeopathic Materia Medica, Anatomy and physiology.
	CO5	Relate the methodology of Homoeopathic Drug Proving integrated with Organon of Medicine.
	CO6	Apply the principles of Homoeopathic Posology in different health care setting like OPD/IPD integrated with Organon of Medicine and Homoeopathic Materia Medica.
	CO7	State the methods of standardization and quality control of homoeopathic medicines to ensure the genuineness of homoeopathic medicines
	CO8	Explain the principles of pharmaconomy, dispensing and preservation of homoeopathic medicines.
	CO9	Engage the principles of pharmaco-vigilance, and adverse drug reaction in relation to homoeopathic medicines.
	CO10	Write an ideal prescription
	CO11	Evaluate the scope for research in homoeopathic pharmacy in the context of the recent advancements in pharmaceutical sciences
Organon of Medicine and Homoeopathic philosophy and Fundamentals of Psychology	CO1	Explain the Cardinal Principles and Fundamental laws of Homoeopathy.
	CO2	Describe the concept of Health, Disease and Cure in Homeopathy
	CO3	Interpret a case according to the Hahnemannian Classification of Disease
	CO4	Apply the Theory of Chronic Disease to determine the miasmatic background in a case.
	CO5	Demonstrate case taking and show empathy with the patient and family during case taking.
	CO6	Demonstrate Analysis, evaluation of the case to form the



		Portrait of disease
	CO7	Apply the concept of Susceptibility to determine posology in a given case
	CO8	Interpret the action of the medicine in a case on the basis of Remedy reactions.
	CO9	Apply knowledge of various therapeutic modalities, auxiliary measures & its integration with prevalent & other concepts in the management of patients.
	CO10	Identify the various obstacles to cure and plan treatment accordingly.
	CO11	Display qualities, duties & roles of a Physician as true practitioner of healing art
Homoeopathic Materia Medica	CO1	Define the homoeopathic Materia Medica
	CO2	Understand the philosophy of homoeopathic Materia Medica.
	CO3	Describe evolution, sources and construction of different types of Homoeopathic Materia Medica.
	CO4	Enumerate the scope and limitations of Homoeopathic Materia Medica.
	CO5	Evolve the portrait and symptomatology of a particular drug using the knowledge of pharmacy, psychology, anatomy, physiology and Organon of medicine.
	CO6	Observe the symptoms of a particular medicine in a clinical set-up with emphasis on individualizing symptoms.
HOMOEOPATHIC REPERTORY and CASE TAKING	CO1	Describe the philosophical background, construction, utility and limitations of various repertories
	CO2	Demonstrate case taking and show empathy with the patient and family during case taking

	CO3	Demonstrate various steps for systematic case processing viz. analysis of case, evaluation of symptoms as per Homoeopathic principles to form Totality of symptoms
	CO4	Choose the appropriate repertorial approach, Method and Technique to repertorize a case
	CO5	Utilize Repertory as a tool to find out simillimum in all types of cases and in the study of Materia Medica
	CO6	Integrate other subjects in understanding the construction and utility of repertories
	CO7	Utilize different software for Repertorization, patient data management and record keeping.
	CO8	Demonstrate aptitude to utilize repertory for research in Homoeopathy and lifelong learning

Yoga for Health Promotion	CO1	The students will be trained in understanding the relationship between Yoga and Homoeopathy in a wholistic approach.
	CO2	The students will be trained in the point of application of yoga in part of treatment.
	CO3	The student will Improved focus and concentration: The meditative aspects of yoga can enhance mental clarity and concentration.



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COURSE OUTCOME

FACULTY OF NURSING



B.Sc. NURSING

Bachelor Of Nursing (B.Sc. Nursing)

Program Outcomes (PO)



PROGRAMME OUTCOMES (POs)

A student upon successful completion of Bachelor's degree in nursing should be able to

1. Assume responsibilities as professional, competent nurses and midwives in providing promotive, preventive, curative, and rehabilitative services.

2. Make independent decisions in nursing situations, protect the rights and facilitate Individuals and groups in pursuit of health, function in the hospital, community nursing services, and conduct research studies in the areas of nursing practice. They are also expected to assume the role of teacher, supervisor and manager in a clinical / public health setting.



B.Sc. NURSING

Bachelor Of Nursing (B.Sc. Nursing)
Program Specific Outcomes (PSO)



PROGRAMME SPECIFIC OUTCOMES (PSOs)

1. Apply knowledge from physical, biological and behavioral sciences, medicine, including alternative systems and nursing in providing nursing care to individuals, families and communities.
2. Demonstrate understanding of life style and other factors, which affect health of individuals and groups.
3. Provide nursing care based on steps of nursing process in collaboration with the individuals and groups.
4. Demonstrate critical thinking skill in making decisions in all situations in order to provide quality care.
5. Utilize the latest trends and technology in providing health care.
6. Provide promotive, preventive and restorative health services in line with the national health policies and programs.
7. Practice within the framework of code of ethics and professional conduct and acceptable standards of practice within the legal boundaries.
8. Communicate effectively with individuals and groups and members of the health team in order to promote effective interpersonal relationships and teamwork.
9. Demonstrate skills in teaching to individuals and groups in clinical/ community health settings.
10. Participate effectively as members of the health team in health care delivery system.
11. Demonstrate leadership and managerial skills in clinical / community health settings.
12. Conduct need based research studies in various settings and utilize the research findings to improve the quality of care.
13. Demonstrate awareness, interest and contribute towards advancement of self and of the Profession.



B.Sc. NURSING

Bachelor Of Nursing (B.Sc. Nursing)

Course Outcomes (CO)



On completion of the course, the students will be able to :

Course outcome Semester-I B.Sc. Nursing		
Subject with code		Course outcome
COMMUNICATIVE ENGLISH FNB110401	CO1	Identify the significance of Communicative English for healthcare professionals.
	CO2	Apply the concepts and principles of English Language use in professional development such as pronunciation, vocabulary, grammar, paraphrasing, voice modulation, spelling, pause and silence.
	CO3	Demonstrate attentive listening in different hypothetical situations.
	CO4	Converse effectively, appropriately, and timely within the given context and the individual or team they are communicating with either face to face or by other means.
	CO5	Read, interpret, and comprehend content in text, flow sheet, framework, figures, tables, reports, anecdotes, etc.
	CO6	Analyze the situation and apply critical thinking strategies.
	CO7	Enhance expression through writing skills.
	CO8	Apply LSRW (Listening, Speaking, Reading, and Writing) Skill in combination to learn, teach, educate, and share information, ideas, and results.
APPLIED ANATOMY FNB110402	CO1	Describe anatomical terms.
	CO2	Explain the general and microscopic structure of each system of the body.
	CO3	Identify relative positions of the major body organs as well as their general anatomic locations.
	CO4	Explore the effect of alterations in structure.
	CO5	Apply knowledge of anatomic structures to analyze clinical situations and therapeutic applications.
APPLIED PHYSIOLOGY FNB110402	CO1	Develop an understanding of the normal functioning of various organ systems of the body.
	CO2	Identify the relative contribution of each organ system towards the maintenance of homeostasis.



	CO3	Describe the effect of alterations in functions.
	CO4	Apply knowledge of physiological basis to analyze clinical situations and therapeutic applications.
APPLIED SOICIOLOGY FNB110403	CO1	Identify the scope and significance of sociology in nursing.
	CO2	Apply the knowledge of social structure and different culture in a society in identifying social needs of sick clients.
	CO3	Identify the impact of culture on health and illness.
	CO4	Develop understanding about types of family, marriage and its legislation.
	CO5	Identify different types of caste, class, social change and its influence on health and health practices.
	CO6	Develop understanding about social organization and disorganization and social problems in India.
	CO7	Integrate the knowledge of clinical sociology and its uses in crisis intervention.
APPLIED PSYCHOLOGY FNB110403	CO1	Identify the importance of psychology in individual and professional life.
	CO2	Develop understanding of the biological and psychological basis of human behavior.
	CO3	Identify the role of nurse in promoting mental health and dealing with altered personality.
	CO4	Perform the role of nurses applicable to the psychology of different age groups.
	CO5	Identify the cognitive and affective needs of clients.
	CO6	Integrate the principles of motivation and emotion in performing the role of nurse in caring for emotionally sick clients.
	CO7	Demonstrate basic understanding of psychological assessment and nurse's role.
	CO8	Apply the knowledge of soft skills in workplace and society.
	CO9	Apply the knowledge of self-empowerment in workplace, society, and personal life.
NURSING FOUNDATION-I FNB110404	CO1	Develop understanding about the concept of health, illness, and scope of nursing within healthcare services.
	CO2	Apply values, code of ethics, and professional conduct in professional life.



	CO3	Apply the principles and methods of effective communication in establishing communication links with patients, families, and other health team members.
	CO4	Develop skill in recording and reporting.
	CO5	Demonstrate competency in monitoring and documenting vital signs.
	CO6	Describe the fundamental principles and techniques of infection control and biomedical waste management.
	CO7	Identify and meet the comfort needs of the patients.
	CO8	Perform admission, transfer, and discharge of a patient under supervision applying the knowledge.
	CO9	Demonstrate understanding and application of knowledge in caring for patients with restricted mobility.
	CO10	Perform first aid measures during emergencies.
	CO11	Identify the educational needs of patients and demonstrate basic skills of patient education.

Course outcome Semester-II B.Sc. Nursing		
Subject with code		Course outcome
APPLIED BIOCHEMISTRY FNB120401	CO1	Describe the metabolism of carbohydrates and its alterations.
	CO2	Explain the metabolism of lipids and its alterations.
	CO3	Explain the metabolism of proteins and amino acids and its alterations.
	CO4	Explain clinical enzymology in various disease conditions.
	CO5	Explain acid-base balance, imbalance, and its clinical significance.
	CO6	Describe the metabolism of hemoglobin and its clinical significance.
	CO7	Explain different function tests and interpret the findings.
	CO8	Illustrate the immunochemistry.
APPLIED NUTRITION &	CO1	Serent age groups and plan a balanced diet for them.
	CO2	Identify the dietary principles for different diseases.
	CO3	Plan therapeutic diet for patients suffering from various disease conditions.



DIETETICS FNB120401	CO4	Prepare meals using different methods and cookery rules.
NURSING FOUNDATION-II FNB120402	CO1	Develop understanding about fundamentals of health assessment and perform health assessment in supervised clinical settings.
	CO2	Demonstrate fundamental skills of assessment, planning, implementation, and evaluation of nursing care using Nursing process approach in supervised clinical settings.
	CO3	Interpret findings of specimen testing applying the knowledge of normal values.
	CO4	Promote oxygenation based on identified oxygenation needs of patients under supervision.
	CO5	Review the concept of fluid, electrolyte balance integrating the knowledge of applied physiology.
	CO6	Apply the knowledge of the principles, routes, effects of administration of medications in administering medication.
	CO7	Calculate conversions of drugs and dosages within and between systems of measurements.
	CO8	Demonstrate knowledge and understanding in caring for patients with altered functioning of sense organs and unconsciousness.
	CO9	Explain loss, death, and grief.
	CO10	Describe sexual development and sexuality.
	CO11	Identify stressors and stress adaptation modes.
HEALTH/NURSING INFORMATICS & TECHNOLOGY FNB120403	CO1	Develop a basic understanding of computer application in patient care and nursing practice.
	CO2	Apply the knowledge of computer and information technology in patient care and nursing education, practice, administration, and research.
	CO3	Describe the principles of health informatics and its use in developing efficient healthcare.
	CO4	Demonstrate the use of information system in healthcare for patient care and utilization of nursing data.
	CO5	Demonstrate the knowledge of using Electronic Health Records (EHR) system in clinical practice.
	CO6	Apply the knowledge of interoperability standards in clinical setting.



	CO7	Apply the knowledge of information and communication technology in public health promotion.
	CO8	Utilize the functionalities of Nursing Information System (NIS) system in nursing.
	CO9	Demonstrate the skills of using data in the management of healthcare.

Course outcome Semester-III B.Sc. Nursing		
Subject with code		Course outcome
APPLIED MICROBIOLOGY FNB130401	CO1	Identify the ubiquity and diversity of microorganisms in the human body and the environment.
	CO2	Classify and explain the morphology and growth of microbes.
	CO3	Identify various types of microorganisms.
	CO4	Explore mechanisms by which microorganisms cause disease.
	CO5	Develop understanding of how the human immune system counteracts infection.
	CO6	Apply the principles of preparation and use of vaccines in immunization.
INFECTION CONTROL INCLUDING SAFETY FNB130401	CO1	Describe pharmacodynamics and pharmacokinetics.
	CO2	Review the principles of drug calculation and administration.
	CO3	Explain the commonly used antiseptics and disinfectants.
	CO4	Describe the pharmacology of drugs acting on the GI system.
	CO5	Describe the pharmacology of drugs acting on the respiratory system.
	CO6	Describe drugs used in the treatment of cardiovascular and blood disorders.
	CO7	Explain the drugs used in the treatment of endocrine system disorders.
	CO8	Describe the drugs acting on skin and drugs used to treat communicable diseases.
PHARMACOLOGY- I FNB130402	CO1	Apply the knowledge of pathology in understanding the deviations from normal to abnormal pathology.



	CO2	Rationalize the various laboratory investigations in diagnosing pathological disorders.
	CO3	Demonstrate the understanding of the methods of collection of blood, body cavity fluids, urine, and feces for various tests.
	CO4	Apply the knowledge of genetics in understanding the various pathological disorders.
	CO5	Appreciate the various manifestations in patients with diagnosed genetic abnormalities.
	CO6	Rationalize the specific diagnostic tests in the detection of genetic abnormalities.
	CO7	Demonstrate the understanding of various services related to genetics.
	PATHOLOGY-I FNB130402	CO1
CO2		Perform complete health assessment to establish a database for providing quality patient care and integrate the knowledge of anatomy, physiology, and diagnostic tests in the process of data collection.
CO3		Identify nursing diagnoses, list them according to priority, and formulate nursing care plan.
CO4		Perform nursing procedures skillfully and apply scientific principles while giving comprehensive nursing care to patients.
CO5		Integrate knowledge of pathology, nutrition, and pharmacology in caring for patients experiencing various medical and surgical disorders.
CO6		Identify common diagnostic measures related to the health problems with emphasis on nursing assessment and responsibilities.
CO7		Demonstrate skill in assisting/performing diagnostic and therapeutic procedures.
CO8		Demonstrate competencies/skills to patients undergoing treatment for medical-surgical disorders.
CO9		Identify the drugs used in treating patients with medical-surgical conditions.



ADULT HEALTH NURSING-I FNB130403	CO1	Explain the etiology, pathophysiology, manifestations, diagnostic studies, treatments, and complications of common medical and surgical disorders.
	CO2	Perform complete health assessment to establish a database for providing quality patient care and integrate the knowledge of anatomy, physiology, and diagnostic tests in the process of data collection.
	CO3	Identify nursing diagnoses, list them according to priority, and formulate nursing care plan.
	CO4	Perform nursing procedures skillfully and apply scientific principles while giving comprehensive nursing care to patients.
	CO5	Integrate knowledge of pathology, nutrition, and pharmacology in caring for patients experiencing various medical and surgical disorders.
	CO6	Identify common diagnostic measures related to the health problems with emphasis on nursing assessment and responsibilities.
	CO7	Demonstrate skill in assisting/performing diagnostic and therapeutic procedures.
	CO8	Demonstrate competencies/skills to patients undergoing treatment for medical-surgical disorders.

Course outcome Semester-IV B.Sc. Nursing		
Subject with code		Course outcome
PHARMACOLOGY – II FNB140401	CO1	Explain the drugs used in the treatment of ear, nose, throat, and eye disorders.
	CO2	Explain the drugs used in the treatment of urinary system disorders.
	CO3	Describe the drugs used in the treatment of nervous system disorders.
	CO4	Explain the drugs used for hormonal replacement and for pregnant women during antenatal, intranatal, and postnatal periods.



	CO5	Explain the drugs used to treat emergency conditions and immune disorders.
	CO6	Discuss the role and responsibilities of nurses towards safe administration of drugs used to treat disorders of various systems with a basic understanding of pharmacology.
	CO7	Demonstrate understanding about the drugs used in alternative systems of medicine.
	CO8	Demonstrate understanding about the drugs used in alternative systems of medicine.
PATHOLOGY - II AND GENETICS FNB140401	CO1	Apply the knowledge of pathology in understanding the deviations from normal to abnormal pathology.
	CO2	Rationalize the various laboratory investigations in diagnosing pathological disorders.
	CO3	Demonstrate the understanding of the methods of collection of blood, body cavity fluids, urine, and feces for various tests.
	CO4	Apply the knowledge of genetics in understanding the various pathological disorders.
	CO5	Appreciate the various manifestations in patients with diagnosed genetic abnormalities.
	CO6	Rationalize the specific diagnostic tests in the detection of genetic abnormalities.
	CO7	Demonstrate the understanding of various services related to genetics..
ADULT HEALTH NURSING - II WITH INTEGRATED PATHOPHYSIOLOGY INCLUDING GERIATRIC NURSING FNB140402	CO1	Explain the etiology, pathophysiology, manifestations, diagnostic studies, treatments, and complications of selected common medical and surgical disorders.
	CO2	Perform complete health assessment to establish a data base for providing quality patient care and integrate the knowledge of diagnostic tests in the process of data collection.
	CO3	Identify diagnoses, list them according to priority, and formulate nursing care plan.
	CO4	Perform nursing procedures skillfully and apply scientific principles while giving comprehensive nursing care to patients.



	CO5	Integrate knowledge of anatomy, physiology, pathology, nutrition, and pharmacology in caring for patients experiencing various medical and surgical disorders.
	CO6	Identify common diagnostic measures related to the health problems with emphasis on nursing assessment and responsibilities.
	CO7	Demonstrate skill in assisting/performing diagnostic and therapeutic procedures.
	CO8	Demonstrate competencies/skills to patients undergoing treatment for medical-surgical disorders.
PROFESSIONALISM, PROFESSIONAL VALUES & ETHICS INCLUDING BIOETHICS FNB140403	CO1	Describe profession and professionalism.
	CO2	Identify the challenges of professionalism.
	CO3	Maintain respectful communication and relationship with other health team members, patients, and society.
	CO4	Demonstrate professional conduct.
	CO5	Describe various regulatory bodies and professional organizations related to nursing.
	CO6	Discuss the importance of professional values in patient care.
	CO7	Explain the professional values and demonstrate appropriate professional values in nursing practice.

Course outcome Semester-V B.Sc. Nursing		
Subject with code		Course outcome
CHILD HEALTH NURSING-I FNB150401	CO1	Develop understanding of the history and modern concepts of child health and child care.
	CO2	Explore the national child welfare services, national programs, and legislation in the light of National Health Policy 2017.
	CO3	Describe the role of preventive pediatrics and perform preventive measures towards accidents.
	CO4	Participate in national immunization programs/Universal Immunization Program (UIP).
	CO5	Identify the developmental needs of children and provide parental guidance.
	CO6	Describe the principles of child health nursing and perform child health nursing procedures.
	CO7	Demonstrate competencies in newborn assessment, planning, and implementation of care to normal and high-risk newborn, including neonatal resuscitation.



	C08	Apply the principles and strategies of Integrated Management of Neonatal and Childhood Illness (IMNCI).
	C09	Apply the knowledge of pathophysiology and provide nursing care to children with respiratory system disorders.
MENTAL HEALTH NURSING – I FNB150402 COMMUNITY HEALTH NURSING-I INCLUDING ENVIRONMENT AL SCIENCE & EPIDEMIOLOGY FNB150403	C01	Trace the historical development of mental health nursing and discuss its scope.
	C02	Identify the classification of mental disorders.
	C03	Develop a basic understanding of the principles and concepts of mental health nursing.
	C04	Apply the Indian Nursing Council practice standards for psychiatric mental health nursing in supervised clinical settings.
	C05	Conduct mental health assessment.
	C06	Identify and maintain therapeutic communication and nurse-patient relationship.
	C07	Demonstrate knowledge of the various treatment modalities and therapies used in mental disorders.
	C08	Apply nursing process in delivering care to patients with mental disorders.
	C09	Provide nursing care to patients with schizophrenia and other psychotic disorders based on assessment findings and treatment/therapies used.
	C01	Explore the evolution of public health in India and community health nursing.
	C02	Explain the concepts and determinants of health.
	C03	Identify the levels of prevention and health problems of India.
	C04	Develop a basic understanding of the health care planning and the present health care delivery system in India at various levels.
	C05	Locate the significance of primary health care and comprehensive primary health care as part of the current health care delivery system focus.
	C06	Discuss health care policies and regulations in India.
	C07	Demonstrate understanding about an overview of environmental science, environmental health, and sanitation.
	C08	Demonstrate skill in nutritional assessment for different age groups in the community and provide appropriate nutritional counseling.
	C09	Provide health education to individuals and families applying the principles and techniques of behavior change appropriate to community settings.



	CO10	Describe community health nursing approaches and concepts.
EDUCATION TECHNOLOGY/ NURSING EDUCATION FNB150404	CO1	Develop basic understanding of the theoretical foundations and principles of teaching and learning.
	CO2	Identify the latest approaches to education and learning.
	CO3	Initiate self-assessment to identify one's own learning styles.
	CO4	Demonstrate understanding of various teaching styles that can be used, based on the learners' readiness and generational needs.
	CO5	Develop understanding of basics of curriculum planning and organizing.
	CO6	Analyze and use different teaching methods effectively that are relevant to student population and settings.
	CO7	Make appropriate decisions.
INTRODUCTION TO FORENSIC NURSING AND INDIAN LAWS FNB150405	CO1	Identify forensic nursing as an emerging specialty in healthcare and nursing practice.
	CO2	Explore the history and scope of forensic nursing practice.
	CO3	Identify forensic team, role, and responsibilities of forensic nurse in total care of victim of violence and in preservation of evidence.
	CO4	Develop a basic understanding of the Indian judicial system and legal procedures.

Course outcome Semester-VI B.Sc. Nursing		
Subject with code		Course outcome
CHILD HEALTH NURSING II FNB160401	CO1	Apply the knowledge of pathophysiology and provide nursing care to children with Cardiovascular, GI, genitourinary, nervous system disorders, orthopedic disorders, eye, ear, and skin disorders, and communicable diseases.
	CO2	Provide care to children with common behavioral, social, and psychiatric problems.
	CO3	Manage challenged children.



	CO4	Identify the social and welfare services for challenged children.
MENTAL HEALTH NURSING-II FNB160402	CO1	Apply nursing process in providing care to patients with substance use disorders, and personality and sexual disorders.
	CO2	Apply nursing process in providing care to patients with behavioral and emotional disorders occurring during childhood and adolescence.
	CO3	Apply nursing process in providing care to patients with organic brain disorders.
	CO4	Identify and respond to psychiatric emergencies.
	CO5	Carry out crisis interventions during emergencies under supervision.
	CO6	Perform admission and discharge procedures as per MHCA 2017.
NURSING MANAGEMENT AND LEADERSHIP FNB160403	CO1	Analyze the healthcare trends influencing the development of nursing services and education in India.
	CO2	Describe the principles, functions, and process of management applied to nursing.
	CO3	Develop a basic understanding and beginning competencies in planning and organizing nursing services in a hospital.
	CO4	Apply the concept of human resource management and identify the job description for all categories of nursing personnel, including in-service education.
	CO5	Discuss the principles and methods of staffing and scheduling in an individual hospital/nursing unit.
	CO6	Develop skill in the management of materials and supplies, including inventory control.
	CO7	Develop team working and interprofessional collaboration competencies.
	CO8	Identify effective leadership styles and develop leadership competencies.
MIDWIFERY /OBSTETRICS AND GYNECOLOGY	CO1	Demonstrate professional accountability for the delivery of nursing care as per INC standards/ICM competencies that are consistent with moral, altruistic, legal, ethical, regulatory, and humanistic principles in midwifery practice.
	CO2	Communicate effectively with individuals, families, and professional colleagues fostering mutual respect and shared



(OBG) NURSING – I FNB160404		decision-making to enhance health outcomes.
	CO3	Recognize the trends and issues in midwifery and obstetrical nursing.
	CO4	Review and describe the anatomy and physiology of the human reproductive system and conception.
	CO5	Describe and apply physiology in the management of normal pregnancy, birth, and puerperium.
	CO6	Demonstrate competency in providing respectful and evidence-based maternity care for women during the antenatal, intranatal, and postnatal period.
	CO7	Uphold the fundamental human rights of individuals when providing midwifery care.

Course outcome Semester-VII B.Sc. Nursing		
Subject with code		Course outcome
COMMUNITY HEALTH NURSING- II FNB170401	CO1	Provide maternal, newborn, and child care, and reproductive health including adolescent care in the urban and rural health care settings.
	CO2	Describe the methods of collection and interpretation of demographic data.
	CO3	Explain population control and its impact on the society and describe the approaches towards limiting family size.
	CO4	Describe occupational health hazards, occupational diseases, and the role of nurses in occupational health programs.
	CO5	Identify health problems of older adults and provide primary care, counseling, and supportive health services.
	CO6	Participate in screening for mental health problems in the community and providing appropriate referral services.
	CO7	Discuss the methods of data collection for HMIS, analysis, and interpretation of data.
	CO8	Discuss about effective management of health information in community diagnosis and intervention.



NURSING RESEARCH AND STATISTICS FNB170402	CO1	Identify research priority areas.
	CO2	Formulate research questions/problem statement/hypotheses.
	CO3	Review related literature on selected research problem and prepare annotated bibliography.
	CO4	Prepare sample data collection tool.
	CO5	Analyze and interpret the given data.
	CO6	Practice computing, descriptive statistics, and correlation.
	CO7	Draw figures and types of graphs on given select data.
	CO8	Develop a research proposal.
MIDWIFERY /OBSTETRIC AND GYNECOLOGY NURSING – II FNB170403	CO1	Demonstrate competency in identifying deviation from normal pregnancy.
	CO2	Describe the assessment, initial management, referral, and nursing care of women with high-risk labor.
	CO3	Assist in the conduction of abnormal vaginal deliveries and caesarean section.
	CO4	Describe the assessment, initial management, referral, and nursing care of women with abnormal postnatal conditions.
	CO5	Demonstrate competency in the initial management of complications during the postnatal period.
	CO6	Demonstrate competency in providing care for high-risk newborn.
	CO7	Apply nursing process in caring for high-risk women and their families.
	CO8	Describe the assessment and management of women with gynecological disorders.

Course outcome Semester-VIII B.Sc. Nursing		
Subject with code		Course outcome
Internship FNB180401		



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COURSE OUTCOME

FACULTY OF NURSING



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P.B.B.Sc. NURSING

Post- Basic Bachelor of Science Nursing

PROGRAMME OUTCOMES (POs)



The course is intended to enable the graduates:

1. Assume responsibilities as professional, competent nurses and midwives at basic level in providing promotive, preventive, curative, and rehabilitative services.
2. Make independent decisions in nursing situations, protect the rights of and facilitate individuals and groups in pursuit of health, function in the hospital, community nursing services, and conduct research studies in the areas of nursing practice. They are also expected to assume the role of teacher, supervisor, and manager in clinical/public health settings.



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Post- Basic Bachelor of Science Nursing

PROGRAMME SPECIFIC OUTCOMES (PSOs)



Students after the completion of graduation in degree PBBSc programs able to:

1. Assess health status, identify nursing needs, plan, implement and evaluate nursing care for patients / clients that contribute to health of individuals, families and communities.
2. Demonstrate competency in techniques of nursing based on concepts and principles from selected areas of nursing, physical, biological and behavioral sciences.
3. Participate as members of health team in the promotive, preventive, curative and restorative health care delivery system of the country.
4. Demonstrate skills in communication and interpersonal relationship.
5. Demonstrate leadership qualities and decision-making abilities in various situations.
6. Demonstrate skills in teaching to individuals and groups in community health settings.
7. Demonstrate managerial skills in community health settings.
8. Practice ethical values in their personal and professional life.
9. Participate in research activities and utilize research findings in improving nursing practice.
10. Recognize the need for continued learning for their personal and professional development.



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Post- Basic Bachelor of Science Nursing

COURSE OUTCOMES (CO)



At the end of the course, the students will-

Course Outcome First Year P.B.B.Sc. Nursing		
Subject with code		Course outcome
NURSING FOUNDATION- FNP110201	C01	Identify professional aspects of nursing.
	C02	Explain theories of nursing.
	C03	Identify ethical aspects of nursing profession.
	C04	Utilize steps of nursing process.
	C05	Identify the role of the nurse in various levels of health services.
	C06	Appreciate the significance of quality assurance in nursing.
	C07	Explain current trends in health and nursing
NUTRITION & DIETETICS- FNP110202	C01	Explain the principles and practices of nutrition and dietetics.
	C02	Plan therapeutic diets in different settings.
	C03	Identify nutritional needs of different age groups and plan diet accordingly.
	C04	Prepare meals using different methods utilizing cookery rules.
	C05	Describe various national programmes related to nutrition
	C06	Describe the role of nurse in assessment of nutritional status and nutrition education
BIOCHEMISTRY - FNP110203	C01	Identify the basic principles of Biochemistry
	C02	Describe functions of water
	C03	Explain the metabolism of Enzyme
	C04	Explain the metabolism of carbohydrates, proteins and fat
BIOPHYSICS- FNP110203	C01	Identify the basic principles of Biophysics.
	C02	Explain the concept of imaging techniques.
	C03	Synthesize the knowledge of these principles in various Nursing situations
PSYCHOLOGY-	C01	Apply psychological principles while performing nursing



FNP110204		duties.
	C02	Distinguish the psychological processes during health and sickness
	C03	Analys own behavior patterns.
	C04	Tabulate the psychological needs of the patients for planning nursing care.
	C05	Participate in psychometric assessment of the client.
MICROBIOLOGY- FNP110205	C01	Identify common disease producing micro-organisms.
	C02	Explain the basic principles of microbiology and their significance in health and disease.
	C03	Demonstrate skill in handling specimens.
	C04	Explain various methods of disinfection and sterilization.
	C05	Identify the role of the nurse in hospital infection control system.
MATERNAL NURSING- FNP110206	C01	Describe the physiology of pregnancy, labour and puerperium.
	C02	Manage normal
	C03	Explain the physiology of lactation and advice on management of breast feeding.
	C04	Be skilled in providing
	C05	Identify and manage high risk pregnancy including appropriate referrals.
CHILD HEALTH NURSING- FNP110207	C01	Explain the modern concept of child care and the principles of child health nursing
	C02	Describe the normal growth and development of children at different ages.
	C03	Manage sick as well as healthy neonates and children.
	C04	Identify various aspects of preventive pediatric nursing and apply them in providing nursing care to children in hospital and community
MEDICAL-SURGICAL NURSING- FNP110208	C01	Explain relevant Anatomy and Physiology of various systems of the body
	C02	Explain Pathophysiology of various disorders.
	C03	Explain the actions, side effects and nursing implications in administering drugs for various disorders
	C04	Discuss the recent advancement in the treatment and care of patients with medical and surgical conditions.



	C05	Develop skill in giving comprehensive nursing care to patients following the steps of nursing process.
	C06	Assist the patients and their families in identifying and meeting their own health needs. Appreciate the role of the nurse in the medical surgical health
ENGLISH- FNP110209	C01	Ability to speak and write grammatically correct English
	C02	Effective skill in reading and understanding the English language.
	C03	Skill in reporting.



Course Outcome Second Year P.B.B.Sc. Nursing		
Subject with code		Course outcome
SOCIOLOGY- FNP120201	CO1	Describe sociological concepts that are applicable to nursing.
	CO2	Determine role of sociology in nursing as related to social institutions in India
	CO3	Develop positive attitudes towards individual, family and community
COMMUNITY HEALTH NURSING- FNP120202	CO1	Explain the concept of various factors contributing to health of individual, family and community.
	CO2	Identify the role of community health nurse.
	CO3	Describe national health care delivery system.
	CO4	Describe epidemiological methods and principles of prevention and control of illness in the community.
	CO5	Identify the role of personnel working in the community health set up.
	CO6	Plan the work of community health nurse and supervise and train health worker
MENTAL HEALTH NURSING- FNP120203	CO1	Identify and describe the philosophy and principles of mental health nursing.
	CO2	Describe the historical development of mental health and psychiatric nursing.
	CO3	Classify mental disorders.
	CO4	Develop skill in history taking and performing mental status examination.
	CO5	Describe etiological factors, psycho-pathology, clinical features, diagnostic criteria and treatment methods used for mental disorders.
	CO6	Manage the patients with various mental disorders.
	CO7	Communicate therapeutically with patients and their families.
	CO8	Identify role of the nurse in preventive psychiatry.
	CO9	Identify the legal aspects in practice of mental health and



		psychiatric nursing.
INTRODUCTION TO NURSING EDUCATION- FNP120204	CO1	Describe the philosophy and principles of Education.
	CO2	Explain the teaching - learning process
	CO3	Develop the ability to teach, using various methods and media.
	CO4	Describe the process of assessment.
	CO5	Describe the administrative aspects of school of nursing
	CO6	Participate in planning and organizing an in-service education programme.
	CO7	Develop basic skill of counselling and guidance
INTRODUCTION TO NURSING SERVICE ADMINISTRATION- FNP120205	CO1	Identify the principles of administration
	CO2	Describe
	CO3	Explain the principles and methods of personnel management
	CO4	Explain the principles of budgeting
INTRODUCTION TO NURSING RESEARCH & STATISTICS- FNP120206	CO1	Define the terms and concepts of nursing research
	CO2	Identify needs and scope of nursing research
	CO3	Identify and define a research problem
	CO4	Locate and list sources of literature for a specific study
	CO5	Describe different research approaches, methods of data collection and sampling techniques with a special reference to survey method.
	CO6	Develop tool for data collection
	CO7	Enumerate steps of data analysis and present data summary in tabular form
	CO8	Use descriptive and co-relational statistics in data analysis
	CO9	Conduct a group research project



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COURSE OUTCOME

FACULTY OF NURSING



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M.Sc. NURSING

Master of Science Nursing

PROGRAMME OUTCOME (POs)



On Completion of the two years M.Sc. Nursing program, the student will be able to:

- PO1 -Utilize/apply the concepts, theories, and principles of nursing science.
- PO2 -Demonstrate advance competence in the practice of nursing.
- PO3 -Practice as a nurse specialist.
- PO4 -Demonstrate leadership qualities and function effectively as nurse educator and manager.
- PO5 -Demonstrate skill in conducting nursing research, interpreting and utilizing the findings from health-related research.
- PO6 -Demonstrate the ability to plan and effect change in nursing practice and in the health care delivery system.
- PO7 -Establish collaborative relationships with members of other disciplines.

- PO8 -Demonstrate interest in continued learning for personal and professional advancement.



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M.Sc. NURSING

Master of Science Nursing

COURSE OUTCOME (CO)



On Completion of the two years M.Sc. Nursing program, all student will be able to learn at the end of :

COURSE OUTCOME FIRST YEAR M.Sc. NURSING		
SUBJECT WITH CODE		COURSE OUTCOME
NURSING EDUCATION- FNM115001	CO1	Explain the aims of education, philosophies, trends in education and health: its impact on nursing education.
	CO2	Describe the teaching learning process.
	CO3	Prepare and utilize various instructional media and methods in teaching learning process.
	CO4	Demonstrate competency in teaching, using various instructional strategies.
	CO5	Critically analyze the existing nursing educational programs, their problems, issues and future trends.
	CO6	Describe the process of curriculum development, and the need and methodology of curriculum change, innovation and integration.
	CO7	Plan and conduct continuing nursing education programs.
	CO8	Critically analyze the existing teacher preparation Programs in nursing.
	CO9	Demonstrate skill in guidance and counseling.
	CO10	Describe the problems and issues related to administration of nursing curriculum including selection and organization of clinical experience.



	CO11	Explain the development of standards and accreditation process in nursing education programs.
	CO12	Identify research priorities in nursing education.
	CO13	Discuss various models of collaboration in nursing education and services.
	CO14	Explain the concept, principles, steps, tools and techniques of evaluation.
	CO15	Construct, administer and evaluate various tools for assessment of knowledge, skill, and attitude.
ADVANCE NURSING PRACTICE- FNM115002	CO1	Appreciate and analyze the development of nursing as a profession.
	CO2	Describe ethical, legal, political and economic aspects of health care delivery and nursing practice.
	CO3	Explain bio- psycho- social dynamics of health, life style and healthcare delivery system.
	CO4	Discuss concepts, principles, theories, models, approaches relevant to nursing and their application.
	CO5	Describe scope of nursing practice.
	CO6	Provide holistic and competent nursing care following nursing process approach.
	CO7	Identify latest trends in nursing and the basis of advance nursing practice.
	CO8	Perform extended and expanded role of nurse.
	CO9	Describe alternative modalities of nursing care.
	CO10	Describe the concept of quality control in nursing.
	CO11	Identify the scope of nursing research.



	CO12	Use computer in patient care delivery system and nursing practice.
	CO13	Appreciate importance of self-development and professional advancement.
NURSING RESEARCH AND STATISTICS- FNM115003 PART-A (NURSING RESEARCH)	CO1	Define basic research terms and concepts.
	CO2	Review literature utilizing various sources.
	CO3	Describe research methodology.
	CO4	Develop a research proposal.
	CO5	Conduct a research study.
	CO6	Communicate research findings.
	CO7	Utilize research findings.
	CO8	Critically evaluate nursing research studies.
	CO9	Write scientific paper for publication.
NURSING RESEARCH AND STATISTICS- FNM115003 PART-B (NURSING STATISTICS)	CO1	Explain the basic concepts related to statistics
	CO2	Describe the scope of statistics in health and nursing
	CO3	Organize, tabulate and present data meaningfully.
	CO4	Use descriptive and inferential statistics to predict results.
	CO5	Draw conclusions of the study and predict statistical significance of the results.
	CO6	Describe vital health statistics and their use in health-related research.
	CO7	Use statistical packages for data analysis.
Clinical Specialty-I	CO1	Appreciate the trends & issues in the field of Medical – Surgical Nursing as a specialty.



Medical Surgical Nursing-I- FNM115101	CO2	Apply concepts & theories related to health promotion.
	CO3	Appreciate the client as a holistic individual.
	CO4	Perform physical, psychosocial assessment of Medical – Surgical patients.
	CO5	Apply Nursing process in providing care to patients.
	CO6	Integrate the concept of family centered nursing care with associated disorder such as genetic, congenital and long-term illness.
	CO7	Recognize and manage emergencies with Medical-Surgical patients.
	CO8	Describe various recent technologies & treatment modalities in the management of critically ill patients.
	CO9	Appreciate the legal & ethical issues relevant to Medical – Surgical Nursing.
	CO10	Prepare a design for layout and management of Medical – Surgical Nursing.
	CO11	Appreciate the role of alternative systems of Medicine in care of patients.
	CO12	Incorporate evidence based Nursing practice and identify the areas of research in the field of Medical – Surgical Nursing.
	CO13	Recognize the role of Nurse practitioner as a member of the Medical –Surgical health team.
	CO14	Teach Medical – Surgical Nursing to undergraduate nursing students & in-service nurses.
	Clinical Specialty-I	CO1



Obstetric & Gynecological Nursing-I- FNM115201	CO2	Describe the population dynamics and indicators of maternal and child health
	CO3	Describe the concepts of biophysical, psychological and spiritual aspects of normal pregnancy, labor and puerperium.
	CO4	Provide comprehensive nursing care to women during reproductive period and newborns.
	CO5	Integrate the concepts of family centered nursing care and nursing process approach in obstetric and gynecological nursing.
	CO6	Identify and analyze the deviations from normal birth process and refer appropriately.
	CO7	Describe the pharmacological agents, their effects during pregnancy, child birth, puerperium, lactation and the role of nurse
	CO8	Counsel adolescents, women and families on issues pertaining to pregnancy, child birth and lactation
	CO9	Describe the role of various types of complementary and alternative therapies in obstetric and gynecological nursing.
	CO10	Incorporate evidence based nursing practice and identify the areas of research in the field of obstetric and gynecological nursing.
	Clinical Specialty-I	CO1
Mental Health Nursing-I- FNM115301	CO2	Explain the dynamics of personality development and human behaviour.
	CO3	Describe the concepts of psychobiology in mental disorders and its implications for psychiatric nursing



	CO4	Demonstrate therapeutic communications skills in all interactions
	CO5	Demonstrate the role of psychiatric nurse practitioner in various therapeutic modalities
	CO6	Establish and maintain therapeutic relationship with individual and groups
	CO7	Uses assertive techniques in personal and professional actions
	CO8	Promotes self-esteem of clients, others and self
	CO9	Apply the nursing process approach in caring for patients with mental disorders
	CO10	Describe the psychopharmacological agents, their effects and nurse's role
	CO11	Recognize the role of psychiatric nurse practitioner and as a member of the psychiatric and mental health team
	CO12	Describe various types of alternative system of medicines used in psychiatric settings
	CO13	Incorporate evidence based nursing practice and identify the areas of research in the field of psychiatric nursing
Clinical Specialty-I	CO1	Appreciate the history and developments in the field of pediatrics and pediatric nursing as a specialty
Child health Nursing-I- FNM115401	CO2	Apply the concepts of growth and development in providing care to the pediatric clients and their families.
	CO3	Appreciate the child as a holistic individual
	CO4	Perform physical, developmental, and nutritional assessment of pediatric clients
	CO5	Apply nursing process in providing nursing care to neonates & children



	CO6	Integrate the concept of family centered pediatric nursing care with related areas such as genetic disorders, congenital malformations and long term illness.
	CO7	Recognize and manage emergencies in neonates
	CO8	Describe various recent technologies and treatment modalities in the management of high risk neonates
	CO9	Appreciate the legal and ethical issues pertaining to pediatric and neonatal nursing
	CO10	Prepare a design for layout and management of neonatal units
	CO11	Incorporate evidence based nursing practice and identify the areas of research in the field of pediatric/neonatal nursing
	CO12	Recognize the role of pediatric nurse practitioner and as a member of the pediatric and neonatal health team
	CO13	Teach pediatric nursing to undergraduate students & in-service nurses
Clinical Specialty-I	CO1	Appreciate the history and development in the field of Community Health and Community Health Nursing.
Community Health Nursing-I- FNM115501	CO2	Appreciate role of individuals and families in promoting health of the Community.
	CO3	Perform physical, developmental and nutritional assessment of individuals, families and groups.
	CO4	Apply the concepts of promotive, preventive, curative and rehabilitative aspects of health while providing care to the people.
	CO5	Apply nursing process approach while providing care to individuals, families, groups and community.



	CO6	Integrate the concepts of family centered nursing approach while providing care to the community.
	CO7	Recognize and participate in the management of emergencies, epidemics and disasters.
	CO8	Apply recent technologies and care modalities while delivering community health nursing care.
	CO9	Appreciate legal and ethical issues pertaining to community health nursing care.
	CO10	Conduct community health nursing care projects.
	CO11	Participate in planning, implementation and evaluation of various national health and family welfare programmes at local, state and the national level.
	CO12	Incorporate evidence based nursing practice and identify the areas of research in the community settings.
	CO13	Participate effectively as a member of Community Health team.
	CO14	Coordinate and collaborate with various agencies operating in the community by using inter-sectoral approach.
	CO15	Teach community health nursing to undergraduates, in-service nurses and the community health workers.
	CO16	Demonstrate leadership and managerial abilities in community health nursing practice



COURSE OUTCOME SECOND YEAR M.Sc. NURSING		
Subject Code		Course Outcome
FNM125101 - NURSING MANAGEMENT	CO1	Describe the philosophy and objectives of the health care institutions at various levels.
	CO2	Identify trends and issues in nursing
	CO3	Discuss the public administration, health care administration vis a vis nursing administration
	CO4	Describe the principles of administration applied to nursing
	CO5	Explain the organization of health and nursing services at the various levels/institutions.
	CO6	Collaborate and co-ordinate with various agencies by using multi-sectoral approach
	CO7	Discuss
	CO8	Discuss various collaborative models between nursing education and nursing service to improve the quality of nursing care
	CO9	Identify and analyse legal and ethical issues in nursing administration
	CO10	Describe the process of quality assurance in nursing services.
	CO11	Demonstrate leadership in nursing at various levels
CLINICAL SPECIALITY-II		
	CO1	Appreciate trends and issues related to cardio vascular and thoracic Nursing.
Medical Surgical Nursing-II- FNM125102	CO2	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of cardio vascular and thoracic conditions



	CO3	Participate in national health programs for health promotion, prevention and rehabilitation of patients with cardio vascular and thoracic conditions
	CO4	Perform physical, psychosocial & spiritual assessment
	CO5	Assist in various diagnostic, therapeutic and surgical procedures
	CO6	Apply nursing process in providing comprehensive care to patients with cardio vascular and thoracic conditions
	CO7	Demonstrate advance skills/competence in managing patients with cardio vascular and thoracic conditions including Advance Cardiac Life Support.
	CO8	Describe the various drugs used in cardio vascular and thoracic conditions and nurses responsibility
	CO9	Demonstrate skill in handling various equipments/gadgets used for critical care of cardio vascular and thoracic patients
	CO10	Appreciate team work & coordinate activities related to patient care.
	CO11	Practice infection control measures.
	CO12	Identify emergencies and complications & take appropriate measure
	CO13	Discuss the legal and ethical issues in cardio vascular and thoracic nursing
	CO14	Assist patients and their family to cope with emotional distress, grief, anxiety and spiritual needs.
	CO15	Appreciate the role of alternative system of medicine in care of patient



	CO16	Incorporate evidence based nursing practice and identify the areas of research in the field of cardiovascular and thoracic nursing
	CO17	Identify the sources of stress and manage burnout syndrome among health care providers.
	CO18	Teach and supervise nurses and allied health workers.
	CO19	Design a layout of ICCU and ICTU and develop standards for cardiovascular and thoracic nursing practice.
Dissertation & Viva- FNM125103		Research Project
CLINICAL SPECIALITY-II Obstetric & Gynecological-II- FNM125202	CO1	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of women with obstetric and gynaecological conditions
	CO2	Perform physical, psychosocial, cultural & spiritual assessment
	CO3	Demonstrate competence in caring for women with obstetrical and gynaecological conditions
	CO4	Demonstrate competence in caring for high risk newborn.
	CO5	Identify and Manage obstetrical and neonatal emergencies as per protocol.
	CO6	Practice infection control measures
	CO7	Utilize recent technology and various diagnostic, therapeutic modalities in the management of obstetrical , gynecological and neonatal care.
	CO8	Demonstrate skill in handling various equipments/gadgets used for obstetrical, gynaecological and neonatal care



	CO9	Teach and supervise nurses and allied health workers.
	CO10	Design a layout of speciality units of obstetrics and gynecology
	CO11	Develop standards for obstetrical and gynaecological nursing practice.
	CO12	Counsel women and families
	CO13	Incorporate evidence-based nursing practice and identify the areas of research in the field of obstetrical and gynaecological nursing
	CO14	Function as independent midwifery nurse practitioner
Dissertation & Viva- FNM125203		Research Project
CLINICAL SPECIALITY-II Mental Health Nursing-II- FNM125302	CO1	Apply the nursing process in the care of patients with mental disorders in hospital and community
	CO2	Demonstrate advanced skills/competence in nursing management of patients with mental disorders
	CO3	Identify and care for special groups like children, adolescents, women, elderly, abused and neglected, people living with HIV/AIDS.
	CO4	Identify and manage psychiatric emergencies.
	CO5	Provide nursing care to critically ill patients with mental disorders
	CO6	Utilize the recent technology and various treatment modalities in the management of patients with mental disorders
	CO7	Demonstrate skills in carrying out crisis intervention.



	CO8	Appreciate the legal and ethical issues pertaining to psychiatric nursing.
	CO9	Identify areas of research in the field of psychiatric nursing.
	CO10	Prepare a design for layout and describe standards for management of Psychiatric units/emergency units/hospitals
	CO11	Teach psychiatric nursing to undergraduate students
Dissertation & Viva- FNM125303		Research Project
CLINICAL SPECIALITY-II Child Health Nursing-II- FNM125402	CO1	Apply the nursing process in the care of ill infants to pre adolescents in hospital and community
	CO2	Demonstrate advanced skills/competence in nursing management of children with medical and surgical problems
	CO3	Recognize and manage emergencies in children
	CO4	Provide nursing care to critically ill children
	CO5	Utilize the recent technology and various treatment modalities in the management of high risk children
	CO6	Prepare a design for layout and describe standards for management of pediatric units/hospitals
	CO7	Identify areas of research in the field of pediatric nursing
Dissertation & Viva- FNM125403		Research Project
	CO1	Appreciate trends and issues related to community health Nursing- reproductive and child health, school



CLINICAL SPECIALITY-II		health, Occupational health, international health, rehabilitation, geriatric and mental health.
Community Health Nursing- II- FNM125502	CO2	Apply epidemiological concepts and principles in community health nursing practice
	CO3	Perform community health assessment and plan health programmes
	CO4	Describe the various components of Reproductive and child health programme.
	CO5	Demonstrate
	CO6	Describe the role and responsibilities of community health nurse in various national health and family welfare programmes
	CO7	Participate in the implementation of various national health and family welfare programme
	CO8	Demonstrate competencies in providing family centered nursing care independently
	CO9	Participate/Conduct research for new insights and innovative solutions to health problems
	CO10	Teach and supervise nurses and allied health workers.
	CO11	Design a layout of sub center/Primary health center/Community health centre and develop standards for community health nursing practice.
	Dissertation & Viva- FNM125503	



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COURSE OUTCOME

FACULTY OF PARAMEDICAL



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Bachelor of Physiotherapy (B.P.T)



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Program Outcomes (PO)



The aim of the course is to provide comprehensive, individually focused training that prepares the students for providing a quality physiotherapy care to the patients so that at the end of the course he/she will be able to perform the following:

- PO1** **KNOWLEDGE:** Apply the concepts of Anatomy, physiology and kinesiology in professional Physiotherapy Practice and select various exercise therapies and Electrotherapeutic techniques for prevention and Treatment of various conditions
- PO2** **LEARNING SKILLS:** Reflect knowledge on assessment planning, implementation in physiotherapy practice requiring for individual rehabilitation.
- PO3** **PROFESSIONAL ETHICS:** Achieve moral principles and values that out to guide the professionalism, ethics, and integrity in their interaction with patients, colleagues, and the community.
- PO4** **ANALYTIC SKILLS:** Critically evaluate research literature, apply evidence- based practices, and contribute to the advancement of physiotherapy through research.
- PO5** **SOCIAL AWARENESS:** Demonstrate the impact of physiotherapy knowledge on the society by participate in interdisciplinary collaboration, effectively contributing to a patient-centered approach to healthcare.
- PO6** **LIFE LONG LEARNING:** Demonstrate a commitment to professional growth and lifelong learning to promote absorption and adoption of new knowledge and tools.



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Program Specific Outcomes (PSO)



Students after the completion of graduation in degree physiotherapy programs able to:

PSO-1 Work effectively in various inter professional collaborative settings like hospitals, Rehabilitation centers, Special Schools, Educational Institutions, Health and Fitness centers, Geriatric Centers, Ergonomic Consultant in Corporate Sectors, Private Consultation, Home Care Services, Industrial Sectors, Sports Management, Fitness Consultant.

PSO-2 Promote health education and improved quality of life through the practice of the profession.



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Course Outcomes (CO)



Students of all under graduate Bachelor degree programs at the time of graduation will be able to learn:

Course Outcomes Year-I B.P.T		
Subject with code		Course Outcome
Human Anatomy FPB110101	CO 1	Identify the major anatomical structures of the human body, including bones, muscles, and organs.
	CO 2	Explain the relationships between different anatomical structures and their functions in the human body systems.
	CO 3	Demonstrate anatomical structures to interpret.
	CO 4	Analyze anatomical variations and abnormalities, understanding their impact on overall health and potential diagnostic challenges.
Human Physiology FPB110102	CO 1	Discuss functions of various systems of human body.
	CO 2	Understand the role of hormones, enzymes, and other different types of cells of Human body.
	CO 3	Explain the physiological mechanisms underlying homeostasis and the regulatory processes that maintain balance in the body.
	CO 4	Describe the structure and function of the cell in brief.
	CO 5	Acquire the skill of basic clinical examination of PNS, CNS, CVS & Respiratory system.
Psychology & Sociology FPB110103	CO 1	Recall the key theories and principles in psychology and sociology, demonstrating knowledge of major concepts in both disciplines.
	CO 2	Understand psychological status of the person in the health and diseases, environmental and emotional influence on the mind and personality.
	CO 3	Explain the underlying principles of psychological and sociological research methods.
	CO 4	Analyze different psychological and sociological perspectives, identifying patterns and connections between theories and their implications for understanding human behaviour and society.
Exercise Therapy I & Soft Tissue Manipulation FPB110104	CO 1	Memorize the fundamental principles of exercise therapy and soft tissue manipulation, including relevant anatomical structures and physiological responses.
	CO 2	Describe application and demonstration of the use of various tools of the therapeutic gymnasium and various starting and derived positions.
	CO 3	Apply exercise prescription to design personalized rehabilitation programs for individuals with specific musculoskeletal conditions, considering their unique needs and



		goals
	CO 4	Explain the biomechanical and physiological effects of exercise therapy and soft tissue manipulation on the musculoskeletal system.
Biomedical Physics FPB110105	CO 1	Describe fundamental principles of physics, particularly those relevant to the human body, including mechanics, electricity, and optics
	CO 2	Explain the application of biomedical physics in diagnostic techniques such as medical imaging, understanding the underlying physical principles and technologies involved
	CO 3	Apply biomedical physics to interpret data from medical instruments and imaging modalities, demonstrating the ability to troubleshoot and optimize equipment.
	CO 4	Analyse the impact of various physical forces on the human body, such as the effects of biomechanics on joint movement and the role of physics in understanding physiological processes.

Course Outcomes Year-II B.P.T		
Subject with code		Course Outcome
Pathology & Microbiology FPB120101	CO 1	Acquire concepts of cell injury and changes produced thereby in different tissues and organs; capacity of the body in healing process.
	CO 2	Discuss the etio-pathogenesis, the pathological effects and the clinical- pathological correlation of common infection and non-infectious disease.
	CO 3	Recall the major pathological conditions and microbial agents, demonstrating knowledge of basic concepts in pathology and microbiology.
	CO 4	Apply pathology and microbiology to analyze clinical cases, recognizing patterns of disease and identifying appropriate diagnostic tests.
Pharmacology FPB120102	CO 1	Recall pharmacological classifications of drugs commonly used in physiotherapy, demonstrating knowledge of drug actions and indications.
	CO 2	Identify whether the pharmacological effect to the drug interferes with the therapeutic response of physiotherapy and vice versa
	CO 3	Apply pharmacological knowledge to develop safe and effective treatment plans, considering individual patient characteristics and potential drug interactions.
	CO 4	Analyze the pharmacokinetics and pharmacodynamics of specific drugs used in physiotherapy, understanding how variations in drug response may impact therapeutic outcomes
Exercise Therapy II	CO 1	Describe advanced principles of exercise physiology,



FPB120103		biomechanics, and rehabilitation strategies, demonstrating knowledge of specialized concepts in exercise therapy
	CO 2	Demonstrate general fitness, exercise and shall gain fitness for oneself.
	CO 3	Apply advanced exercise prescription principles to design and implement comprehensive rehabilitation programs for complex musculoskeletal and neurological conditions.
	CO 4	Acquire the skill of assessment of isolated & group muscle strength, & Range of motion of the joints subjectively & objectively
Kinesiology FPB120104	CO 1	Acquire the skill of assessment of isolated and group muscle strength subjectively and objectively.
	CO 2	Recall the major anatomical structures and functions involved in human movement, demonstrating knowledge of the principles of kinesiology.
	CO 3	Apply kinesiology to optimize movement patterns in various activities, such as sports, ergonomics, and rehabilitation exercises.
	CO 4	Analyze the various normal musculoskeletal movements during breathing, gait and daily living activities and in terms of biomechanics and physiological principles.
Psychiatry FPB120105	CO 1	Recall major psychiatric disorders, understanding the diagnostic criteria and classifications in psychiatry.
	CO 2	Enumerate various psychiatric disorders with special emphasis to movement, pain and ADL & describe the various causative factors and methods of assessment and management
	CO 3	Acquire the knowledge in brief about the pathological and etiological factors, common signs and symptoms and management of various psychiatric conditions
	CO 4	Analyze the impact of psychiatric disorders on a patient's physical and emotional well-being, recognizing the interplay between mental and physical health.
Electrotherapy FPB120106	CO 1	Apply electrotherapy to select and administer appropriate modalities for specific patient conditions, considering individualized treatment goals and safety precautions.
	CO 2	Describe various types of electrodes used in therapeutics, resistance offered by the skin and significance of various media used to reduce the same
	CO 3	Describe the principles of electrotherapy, including the physiological effects of different electrical modalities used in physiotherapy.
	CO 4	Explain the indications and contraindications of various electrotherapeutic modalities, understanding their applications in different clinical scenarios.



Course Outcomes Year-III B.P.T		
Subject with code		Course Outcome
General Medicine, Skin & VD FPB130101	CO 1	Recall the major diseases and conditions within the scope of general medicine and dermatology, demonstrating basic knowledge of common medical disorders and skin conditions.
	CO 2	Acquire knowledge in structure and function of the skin and about various primary, secondary and special skin lesions related to systemic disorders
	CO 3	Describe etiology, clinical features, and management of bacterial, fungal, viral, allergic, autoimmune skin diseases
	CO 4	Apply general medicine to conduct comprehensive patient assessments, including history-taking and physical examinations, recognizing symptoms and signs related to medical and dermatological issues
Neurology & Pediatrics FPB130102	CO 1	Underline common neurological and pediatric disorders, demonstrating knowledge of developmental milestones and neurological conditions affecting various age groups.
	CO 2	Describe neuro muscular, Musculo skeletal and cardio pulmonary conditions related to immunological conditions, nutritional deficiencies, infectious disease, and genetically transmitted conditions.
	CO 3	Acquired clinical examination of a neonate / child with respect to neurological, musculoskeletal, and respiratory function.
	CO 4	Apply neurology and paediatrics to assess and treat children and adults with neurological conditions, adapting interventions based on age-specific considerations.
Surgery, Obstetrics and Gynecology FPB130103	CO 1	Underline surgical, obstetric, and gynaecological procedures and conditions, demonstrating knowledge of the anatomical and physiological aspects relevant to physiotherapy practice.
	CO 2	Classify, clinically evaluate, and describe the surgical management in brief in a) wounds- ulcers b) burns
	CO 3	Describe pre-operative evaluation, surgical indications and various surgical approaches in various abdominal conditions and peripheral vascular conditions
	CO 4	Apply surgery, obstetrics, and gynecology to conduct pre- and post-operative assessments, developing tailored physiotherapy plans for optimal recovery.
Physical & Functional Diagnosis FPB130104	CO 1	Recall the key principles and techniques of physical examination for various body systems
	CO 2	Demonstrating assessment tools and diagnostic methods
	CO 3	Describe the physiology of nerve impulse, motor unit, its electro- physiological character and acquire the skill of performance and interpretation of various electro- diagnostic tests in the assessment of peripheral nerve lesions



	CO 4	Evaluate the reliability and validity of various physical assessment tools, considering their utility in different patient populations and clinical settings.
Orthopedics FPB130105	CO 1	Recall common orthopaedic conditions and musculoskeletal disorders
	CO 2	Gain the skill of clinical examination and interpretation of the preoperative cases and all the post-operative cases
	CO 3	Read and interpret salient features of the x-ray of the spine and extremities, and correlate the radiological findings with the clinical findings.
	CO 4	Apply knowledge of orthopaedics to conduct thorough musculoskeletal assessments, identifying impairments, functional limitations, and participation restrictions
Preventive & Social Medicine FPB130106	CO 1	Recall key principles of preventive medicine, including health promotion, disease prevention, and community health strategies
	CO 2	Explain the social determinants of health and their impact on individual and community well-being, understanding the broader context of healthcare.
	CO 3	Apply principles of preventive and social medicine to design and implement community-based health programs, considering cultural, economic, and environmental factors
	CO 4	Explain principles and philosophy of health education and health education tools

Course Outcomes Year-IV B.P.T		
Subject with code		Course Outcome
Physiotherapy In Neurological Conditions FPB140101	CO 1	Recall the major neurological conditions and disorders
	CO 2	Assess neuro motor and psychosomatic dysfunction in terms of alteration in the muscle tone, power, coordination, involuntary movements, sensations, perceptions etc.
	CO 3	Demonstrating knowledge of the anatomical and physiological basis of neurological impairments.
	CO 4	Explain the impact of neurological conditions on motor control, sensory function, and cognitive abilities, demonstrating an understanding of the complexity of neurological rehabilitation.
Physiotherapy In Musculoskeletal Conditions FPB140102	CO 1	Identify the musculoskeletal dysfunction in terms of biomechanical, kinesiological and biophysical basis.
	CO 2	Recall common musculoskeletal conditions and injuries, demonstrating knowledge of anatomy, biomechanics, and tissue pathology relevant to musculoskeletal physiotherapy
	CO 3	Understand the nature of sports injuries, able to evaluate and treat sports injuries, understand the role of physiotherapist in training and rehabilitating a sports person Prescribe appropriate walking aids, orthoses, and prosthesis.



	CO 4	Apply advanced assessment techniques to diagnose musculoskeletal conditions and design evidence-based rehabilitation programs, considering individual patient goals and needs.
Physiotherapy In Cardio Respiratory & Medical Surgical Conditions FPB140103	CO 1	Identify cardio vascular and pulmonary dysfunction based on pathophysiological principles and arrive at the appropriate physical and functional diagnosis.
	CO 2	Explain the physiological responses to cardiorespiratory conditions and the impact on functional capacity, demonstrating an understanding of the challenges in cardiorespiratory rehabilitation.
	CO 3	Acquire knowledge of the overview of patients care at the intensive care area, artificial ventilation, suctioning, positioning for bronchial hygiene and continuous monitoring of the patient at the intensive care area.
	CO 4	Apply advanced assessment techniques to evaluate cardiorespiratory function and design individualized exercise and respiratory interventions for patients with diverse conditions.
Community Physiotherapy Rehabilitation and Assistive Technologies FPB140104	CO 1	Understand key principles and models of community-based rehabilitation, demonstrating knowledge of the diverse needs of individuals in community settings.
	CO 2	Explain the social determinants of health and their impact on community rehabilitation, understanding the importance of cultural competence and social inclusion.
	CO 3	Describe the evaluation of disability & planning for prevention & rehabilitation
	CO 4	Apply principles of community rehabilitation to design and implement programs that address the needs of individuals with disabilities in diverse community settings
Ethics and Management FPB140105	CO 1	Acquire bedside manners and communication skills in relation with patients, peers seniors and other professionals.
	CO 2	Understand the fundamental principles of medical ethics and healthcare management, demonstrating knowledge of ethical frameworks, regulations, and organizational structures
	CO 3	Develop skill to evaluate and make decision for plan of management based on sociocultural values and referral practice.
	CO 4	Apply ethical reasoning and decision-making skills to analyze and resolve complex ethical dilemmas in physiotherapy practice and healthcare management.
Biostatistics & Research Methodology FPB140106	CO 1	Describe key statistical concepts, research design principles, and methodologies relevant to physiotherapy research.
	CO 2	Explain the fundamental principles of biostatistics, including probability, hypothesis testing, and statistical inference, understanding their applications in research.



	CO 3	Apply statistical techniques to analyze and interpret data from physiotherapy research studies, demonstrating proficiency in using statistical software.
	CO 4	Analyze research methodologies and study designs in physiotherapy literature, understanding the strengths, limitations, and potential biases in research studies.



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COURSE OUTCOME

FACULTY OF PARAMEDICAL



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Master of Physiotherapy (M.P.T)



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Program Outcomes (PO)



The aim of the course is to provide comprehensive, individually focused training that prepares the students for providing a quality physiotherapy care to the patients so that at the end of the course he/she will be able to perform the following:

- PO1** Demonstrate professional and ethical behavior appropriate to at least the minimum standard expected for a Physiotherapy Post Graduate.
- PO2** Using an Evidence Based analysis interpret assessment findings and set realistic short- and long-term goals and undertake discharge plans.
- PO3** Apply general principles of Practice and understand their applications in enhancement of Physiotherapy Practice.
- PO4** Understand various physiotherapy treatment models like physiotherapy and rehabilitation model.
- PO5** Understand the clinical manifestations and to apply the suitable management models in various electives.
- PO6** Appreciate the importance of clinical epidemiology, research ethics and advance in computer applications and formulate research process in physiotherapy.



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Program Specific Outcomes (PSO)



Students after the completion of graduation in degree physiotherapy programs able to:

PSO-1 Critically evaluate, prioritize, and apply physiotherapy approaches, paradigms and techniques and utilize appropriate, evidence-based skills, techniques, and practice in managing and treating people with injury, disability, or illness in a range of health care and/or rehabilitation settings.

PSO-2 Acquire and utilize new knowledge, ethics, research, technologies and other appropriate resources and methods to optimize, and to ensure cost- effectiveness, quality and continuous improvement of health care delivery and outcomes.



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Course Outcomes (CO)



Students of all under graduate Bachelor degree programs at the time of graduation will be able to learn:

Course Outcomes Year-I & II M.P.T		
Subject with code		Course Outcome
Basic Sciences FPM110201	CO 1	Apply knowledge of basic sciences to analyze appropriate physiotherapeutic interventions, showcasing the ability to transfer theoretical knowledge to practical situations.
	CO 2	Acquire knowledge of exercise physiology including exercise metabolism, cardio-respiratory response to exercise, energy, nutrition, and environmental factors in exercise.
	CO 3	Integrate information from various basic science disciplines to develop comprehensive treatment plans, illustrating the synthesis of knowledge for effective patient care.
	CO 4	Assess the efficacy of different physiotherapeutic approaches based on their understanding and proposing modifications for continuous improvement in patient care.
	CO 5	Describe the terminology in research, ethical issues and research process.
	CO 6	Understand the professional ethics and responsibility as a therapist.
Physical And Functional Diagnosis FPM110202	CO 1	Interpret diagnostic data, integrating information from multiple sources to identify underlying pathology, contributing factors, and potential treatment implications.
	CO 2	Learn the assessment of various conditions through appropriate and valid tools.
	CO 3	Plan strategies for management of various musculoskeletal, neurological, cardio pulmonary problems and in various medical and surgical conditions.
	CO 4	Frame comprehensive management of physical ailments to develop independent professional knowledge and skill.
Advanced Therapeutics FPM110203	CO 1	Analyze the effectiveness of different advanced therapeutic modalities, considering patient responses, potential risks, and benefits.
	CO 2	Recall the underlying theories, principles, and evidence supporting their application in physiotherapy.
	CO 3	Evaluate the outcomes of advanced therapeutic interventions, considering both short-term and long-term effects on patient function and quality of life.
	CO 4	Apply advanced therapeutic interventions, selecting and



		implementing appropriate techniques based on a thorough assessment and individualized treatment goals.
Orthopedics FPM110204	CO 1	Advanced understanding of the scope of practice of musculoskeletal physiotherapy, advanced knowledge of physical, biological, medical and behavioural sciences.
	CO 2	The ability to develop and implement a clinical management plan based on the interpretation of assessment findings.
	CO 3	Ability to perform an appropriate subjective and physical examination, with development of suitable analytical skills to evaluate data obtained.
	CO 4	Understanding of the basic sciences and their integration with orthopaedic physiotherapy clinical practice.
Neuro Sciences FPM110204	CO 1	Advanced understanding of the changing knowledge base in neurology, and the international context and sensitivities of the area.
	CO 2	Acquire knowledge about the developmental processes in the nervous system, sensorimotor systems and the processing of sensory information, the programming and execution of movement, mechanisms of plasticity, learning and recovery of function after injury, higher cortical functions and their disorders following brain injury.
	CO 3	Manage competing demands on time, including self-directed project work.
	CO 4	Articulate their knowledge, understanding and managing neurological patients.
	CO 5	Application of neuroscience to clinical situations.
Cardiorespiratory Disorders FPM110204	CO 1	Assessment and treatment planning, including integration and interpretation of patient problems and effective goal setting.
	CO 2	Intervention that is based on sound base of evidence and sensitive to service delivery models and the culture of both the patient and the organisation.
	CO 3	Critical evaluation of assessment and treatment approaches.
	CO 4	Education of patients, caregivers and health professionals, consultancy and advocacy; Goal setting, self-evaluation and reflective practice.
	CO 5	Understanding of professional responsibility and ethical principles in relation to individuals and community, both locally and internationally.



Gokul Pharmacy College B. Pharm

Bachelor of Pharmacy (B. Pharm)
Batch 2022-23
Program Outcomes (PO)



Students of all undergraduate pharmacy degree programs at the time of graduation will be able to learn:

PO1: Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioural, social, and administrative pharmacy sciences; and manufacturing practices.

PO2: Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

PO3: Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyse, evaluate and apply information systematically and shall make defensible decisions.

PO4: Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy related computing tools with an understanding of the limitations

PO5: Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and teambuilding when planning changes required for fulfilment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and wellbeing.

PO6: Professional Identity: Understand, analyse and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).

PO7 : Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behaviour that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the Pharmacy practice.

PO9: Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.

PO10: The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.

PO11: Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.



Gokul Pharmacy College

B. Pharm

Bachelor of Pharmacy (B. Pharm)
Batch 2022-23
Program Specific Outcomes
(PSO)

Students after the completion of graduation in degree pharmacy programs able to:



PSO1: Drugs and Diseases: Sound knowledge of different classes of drugs, their mechanism of action, dynamics, kinetics, structure activity relationships, pathophysiology and pharmacotherapeutics of various diseases.

PSO2: Drug Development: High competency in synthesizing, developing, analyzing and/or evaluating various pharmaceuticals and their formulations.

PSO3: Professional competency: Innovative and having aptitude for research, effective communicator, strong leadership and entrepreneur ability in order to embellish true professional identity.

PSO4: Well-rounded education: Ethical on code of conduct, culturally competent and responsible citizen and true exhibitor of their role of pharmacist in the community.



Gokul Pharmacy College

B. Pharm

Bachelor of Pharmacy (B. Pharm)

Batch 2022-23

Course Outcomes (CO)



Students of all undergraduate pharmacy degree programs at the time of graduation will be able to learn:

Semester-I

Subject: Human Anatomy and Physiology I – Theory

Subject Code: BP101T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Explain the gross morphology, structure and functions of various organs of the human body
CO2	To learn and acquire the knowledge of homeostatic mechanisms and their imbalances
CO3	To study and identify the various tissues and organs of different systems along with their co-relation with human body.
CO4	To gain, explore and update the knowledge of special senses and nervous system

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	2	1	1	2	1	3	1	3	3	2	0	0
CO2	3	1	2	1	2	2	2	1	2	2	2	3	2	0	0
CO3	3	2	1	1	2	1	1	1	1	2	3	3	2	0	0
CO4	3	1	1	1	1	2	1	1	2	1	3	2	2	0	0



Subject: Pharmaceutical Analysis –Theory

Subject Code: BP102T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Understand the principles of volumetric titration, Calculation of Volumetric analysis, Chemical reaction and pH change during the titration.
CO2	Understand the principles of electro chemical analysis
CO3	Develop analytical skills
CO4	Understanding of the basic concepts of drug analysis

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	1	1	1	2	1	1	1	2	3	2	0	0
CO2	3	1	2	3	1	1	1	1	1	1	2	3	2	0	0
CO3	3	2	2	1	1	1	1	1	1	1	2	3	2	0	0
CO4	3	1	2	2	1	1	2	1	2	1	2	2	3	0	0



Subject: Pharmaceutics I – Theory

Subject Code: BP103T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Students shall be able to understand the basic concept, history of Pharmacy in India. Also will be able to understand the Pharmacopoeia, various dosage forms, information about prescription and posology means calculation of doses.
CO2	In this course, students will be able to understand the concept of various systems of calculation of dose, solvents/solution, isotonic solution, freezing point etc. Also students should be well aware about the powder and liquids dosage form
CO3	Students shall understand about various Monophasic and Biphasic liquids. Students will know about the methods of preparation of Gargles, Mouthwashes, Throat Paint, Eardrops, Nasal drops, Enemas, Syrups, Elixirs, Liniments, Lotions, Suspensions and Emulsion.
CO4	Students shall be able to understand the about the suppositories, displacement value & its calculations. Also students will be able to understand types Pharmaceutical incompatibilities.
CO5	After completion of this chapter, students will understand about various ointment bases, excipients and methods of preparation and evaluation tests of semisolids

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	2	1	1	2	2	2	2	2	2	2	3	3	2	0	0
CO2	3	2	2	2	3	2	2	3	2	2	2	3	2	0	0
CO3	3	2	2	3	3	3	3	3	2	2	3	3	2	0	0
CO4	3	3	2	3	2	3	3	2	3	2	2	2	2	0	0
CO5	3	3	3	3	3	2	3	3	2	3	3	2	3	0	0

**Subject:** Pharmaceutical Inorganic Chemistry (PIC) Theory**Subject Code:** BP104T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Explain the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
CO2	Understand method of preparation, physical and chemical properties, medicinal and pharmaceutical importance of inorganic compounds.
CO3	Acquire the knowledge of acids, bases and buffers
CO4	Describe the medicinal and pharmaceutical importance of Radiopharmaceuticals.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	1	1	2	2	1	3	3	3	3	2	0	0
CO2	3	1	1	1	1	3	2	3	3	2	3	3	2	0	0
CO3	3	1	2	1	1	2	2	1	3	3	3	3	2	0	0
CO4	3	1	1	1	1	3	2	2	3	3	3	2	2	0	0

Subject name: COMMUNICATION SKILLS



Subject code: BP105T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Understand the basics of communication and its significance in the career as a pharmacist
CO2	Comprehend and express any idea or thought in an effective manner using the four basic communication skills: Listening, Speaking, Reading, Writing (LSRW).
CO3	Make effective presentation, face job interview and participate in group communication fruitfully
CO4	Handle various professional communication situations more impressively and effectively
CO5	ce the confidence level of students and enable them to communicate in real life.
CO6	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	0	0	0	0	0	1	1	0	3	2	0	0	0	0	3	2
CO2	0	0	0	0	0	2	1	0	3	2	0	2	0	0	3	2
CO3	0	0	0	0	0	1	1	0	3	1	0	3	0	0	3	3
CO4	0	0	0	0	0	2	2	0	3	2	0	2	0	0	3	2
CO5	0	0	0	0	0	2	1	0	2	1	0	3	0	0	2	3
CO6	0	0	0	0	0	3	2	0	2	1	0	0	0	0	2	1



Subject name: Remedial Mathematics

Subject code: BP106RMT

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Relate the theory and applications of basic mathematics with pharmacy
CO 2	Discuss applications of partial fraction, limits and continuity and logarithm for pharmaceutical computation
CO 3	Understand calculus and analytical geometry for pharmaceutical problems solving
CO 4	Utilize the formulas of matrices and determinant for calculations related to pharmacy
CO 5	Create and evaluate differential equations used in pharmaceutical sciences

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	3	0	2	0	0	0	0	0	0	0	0	0	3	2	0	0
CO2	3	0	2	0	0	0	0	0	0	0	0	2	3	2	0	0
CO3	3	0	2	0	0	0	0	0	0	0	0	3	3	2	0	0
CO4	3	0	2	0	0	0	0	0	0	0	0	2	3	2	0	0
CO5	3	0	1	0	0	0	0	0	0	0	0	3	3	1	0	0



Subject: Human Anatomy and Physiology I – Practical

Subject Code: BP107P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Identify various types of epithelial, muscular, connective and nervous tissue.
CO2	Identify and understand concept of axial, appendicular skeleton and separate bone
CO3	Expertise in collection of blood in subject to determination of values like bleeding and clotting time along with their significance in pathological conditions
CO4	Estimation of hemoglobin content, determination of blood group, erythrocyte sedimentation rate (ESR) and their relevance in diseases
CO5	Enumeration of hematological values like white blood cell (WBC) count and total red blood corpuscles (RBC) count through various methods.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	1	2	1	3	3	1	3	1	3	3	2	0	0
CO2	3	2	1	1	2	3	3	3	3	1	3	3	2	0	0
CO3	3	1	1	1	1	3	3	1	3	1	3	3	2	0	0
CO4	3	2	1	1	1	3	3	1	3	1	3	2	2	0	0
CO5	3	2	1	1	1	3	3	1	3	1	3	2	3	0	0



Subject: Pharmaceutical Analysis – Practical

Subject Code: BP108P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Student shall able to state principles of volumetric and electrochemical analysis
CO2	Student shall able to prepare various concentrations of solutions (Molar/Normal)
CO3	Student shall able to carry out various volumetric and electrochemical titrations
CO4	Student shall able to have analytical skills as mentioned in syllabus

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	1	1	2	2	1	3	3	3	3	2	0	0
CO2	3	1	1	1	1	3	2	3	3	2	3	3	2	0	0
CO3	3	1	2	1	1	2	2	1	3	3	3	3	2	0	0
CO4	3	1	1	1	1	3	2	2	3	3	3	2	3	0	0



Subject: Pharmaceutics I Practical

Subject Code: BP109P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Students should know about the formulation aspects of various dosage forms like syrups, elixirs and linctus.
CO2	Should be able to understand the procedure and various excipients used in liquid dosage forms.
CO3	Students should be able to calculate the quantities of ingredients and packaging of powder like ORS powder (WHO), Effervescent granules, Dusting powder and Divided powders.
CO4	Students will be able to understand various semisolid bases and the methods of manufacturing of ointments and suppositories. Also, should know about the gargles in throat infection.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	3	2	1	1	1	1	3	1	3	3	2	0	0
CO2	3	2	3	2	1	1	2	1	2	1	2	3	2	0	0
CO3	3	1	1	1	2	1	1	1	1	1	1	3	2	0	0
CO4	3	1	1	1	1	2	1	2	1	2	3	2	2	0	0



Subject: Pharmaceutical Inorganic Chemistry (PIC) Practical

Subject Code: BP110P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Perform the procedure/method for identifying impurities in pharmaceuticals.
CO2	Explain the procedure for identification of inorganic compounds and their impurities.
CO3	Understand the method of preparation of inorganic pharmaceuticals

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO2	PSO3	PSO4
CO1	3	2	3	1	1	3	1	1	3	3	3	2	0	0
CO2	3	2	3	1	1	3	1	1	3	3	3	2	0	0
CO3	3	2	3	1	1	2	1	1	2	3	3	2	0	0



Semester-II

Subject: Human Anatomy and Physiology II– Theory

Subject Code: BP 201T

COURSE OUTCOME	DESCRIPTION/STATEMENT
CO1	To understand the gross morphology, structure and functions of various organs of the human body.
CO2	To learn the basis of various homeostatic mechanisms and their imbalances
CO3	To identify the various tissues and organs of different systems of human body.
CO4	To acquire knowledge about hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and also record blood pressure, heart rate, pulse and respiratory volume along with its rationale
CO5	To understand and analyze the co-ordinated working pattern of different organs system.
CO6	To gained the knowledge about interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	3	2	1	1	1	1	3	1	3	3	2	0	0
CO2	3	2	3	2	1	1	2	1	2	1	2	3	2	0	0
CO3	3	1	1	1	2	1	1	1	1	1	1	3	2	0	0
CO4	3	1	1	1	1	2	1	2	1	2	3	2	2	0	0
CO5	3	2	3	2	1	1	2	1	2	1	2	2	3	0	0
CO6	3	1	3	2	1	1	1	1	3	1	3	2	3	0	0

**Subject:** Pharmaceutical Organic Chemistry-I (POC-I) Theory**Subject Code:** BP202T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Describe the classification of organic compounds and write the structure, name and the type of isomerism of the organic compounds
CO 2	Explain hybridization in alkanes, alkenes and alkynes, and stabilities in alkene and conjugated dienes
CO 3	Acquire knowledge about preparation, reactivity, properties and uses of compounds with functional groups, such as alkyl halides, alcohols, aldehydes, ketones, carboxylic acids, and amines
CO 4	Explain the mechanism involved in the substitution, addition, nucleophilic and elimination reactions

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	2	1	3	1	2	2	1	3	3	2	0	0
CO2	3	1	2	2	1	3	1	2	2	1	3	3	2	0	0
CO3	3	2	2	2	1	3	1	2	2	1	3	3	2	0	0
CO4	3	1	3	2	1	3	1	2	1	1	3	2	2	0	0



Subject name: Pharmaceutical Engineering– Theory

Subject Code: BP203T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	My students should be able to explain various Unit Operation mentioned as per in syllabus
CO2	My students should be able to demonstrate and operate various machines used in mentioned in syllabus
CO3	My students should be able to explain the material handling techniques as mentioned in syllabus which will also help them in research and development.
CO4	My students should be able to practice various steps to prevent environmental pollution
CO5	My students should be able to recall and describe various process involved in manufacturing of pharmaceuticals.
CO6	My students should be able to summarize about significance of plant-layout, corrosion and industrial hazards.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	2	2	2	2	2	2	2	2	2	3	2	0	0
CO2	3	1	2	2	2	2	2	2	2	2	2	3	2	0	0
CO3	3	1	2	2	2	2	2	2	2	2	2	3	2	0	0
CO4	3	1	2	2	2	2	2	2	2	2	2	2	2	0	0
CO5	3	1	2	2	2	2	2	2	2	2	2	2	3	0	0
CO6	3	1	2	2	2	2	2	2	2	2	2	2	3	0	0



Subject name: Computer Applications in Pharmacy.

Subject Code: BP204T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Know the number systems, conversion, calculations and the concept of the information systems and software in pharmacy
CO2	Understand various types of applications of software used in pharmacy
CO3	Understand the various web technologies and the different databases and various applications of databases in pharmacy.
CO4	Apply the knowledge of Bioinformatics Databases, and data analysis in Preclinical development like CDS, LIMS and TIMS
CO5	Design questionnaires, invoice tables, drug information storage and its retrieval and its side effects.
CO6	using word process Create a personal HTML webpage, invoice tables, generate reports and Exporting Tables, Queries, Forms and Reports

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	2	1	1	1	0	0	0	0	0	0	0	0	2	1	0	0
CO2	2	1	1	1	0	0	0	0	0	0	0	0	2	1	0	0
CO3	2	2	1	1	0	0	0	0	0	0	0	0	2	2	0	0
CO4	2	2	2	2	0	0	0	0	0	0	0	0	2	2	0	0
CO5	2	2	2	0	0	0	0	0	0	0	0	0	2	2	0	0
CO6	2	2	2	0	0	0	0	0	0	0	0	0	2	2	0	0



Subject Code: Environmental Sciences– Theory

Subject Code: BP205T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Student should able to explain basics of environment like ecology, ecosystem, food chain, food web and ecological pyramids
CO2	Student should able to describe list natural resources and explain their conservation
CO3	Student should able to describe the current problems of environment and how to solve them, role of individual in conservation of environment.
CO4	student should able to understand and identify the different types of environmental pollution and measures to minimize it
CO5	Student should able to understand and explain the concept of ecosystem, structure, function of forest ecosystem, grass ecosystem, desert ecosystem & aquatic ecosystem.
CO6	Student should able to understand the components of Ecosystem and Energy flow within it.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	0	2	2	0	0	0	0	2	2	0	0	0	0	1
CO2	2	3	1	3	0	0	0	0	1	2	0	0	0	0	2
CO3	2	0	3	2	0	1	0	0	3	2	0	0	0	0	2
CO4	2	0	2	3	0	0	0	0	2	2	0	0	0	0	2
CO5	3	2	2	2	0	0	0	0	1	0	0	0	0	0	2
CO6	2	0	3	3	0	0	0	0	1	3	0	0	0	0	2

**Subject:** Human Anatomy and Physiology II– Practical**Subject code:** BP 206P

COURSE OUTCOME	DESCRIPTION/STATEMENT
CO1	Able to learn the anatomy and physiology of organs of digestive system like salivary glands, stomach, intestine, pancreas and liver and process of Carbohydrate, Protein and Fat digestion and absorption.
CO2	Understand the Organization and functions of brain, Spinal cord, afferent and efferent nerves.
CO3	Perform the anatomy and physiology of urinary system, structure of Nephron, formation of urine, mechanism of micturition and regulation of body fluid volume
CO4	Identify the Physiology of hormones of hypothalamus-pituitary gland, adrenal gland, thyroid gland, pancreas and gonads (testis and ovary).
CO5	Able to learn the anatomy and functions of organs of respiratory system, exchange of respiratory gases, transport of respiratory gases, regulation of respiration, respiratory volumes and vital capacity.
CO6	Explain the Anatomy and physiology of reproductive organs, pregnancy.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	2	3	1	2	0	1	2	0	3	3	2	0	0
CO2	3	2	2	2	1	1	0	1	2	0	3	3	2	0	0
CO3	3	2	3	2	1	1	0	1	3	0	3	3	2	0	0
CO4	3	3	2	2	1	1	0	1	1	0	3	2	2	0	0
CO5	3	2	2	2	1	1	0	1	3	0	3	2	3	0	0
CO6	3	2	2	2	1	1	0	1	1	0	3	2	3	0	0

**Subject:** Pharmaceutical Organic Chemistry-I (POC-I) Practical**Subject Code:** BP207P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Acquire knowledge of, and training in systematic qualitative analysis of unknown organic compounds.
CO 2	Acquire knowledge of, and training in Identification of the unknown compound from the literature using melting point/ boiling point.
CO 3	Learn and understand the method of preparation of suitable solid derivatives from organic compounds

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	1	1	2	1	2	2	2	3	3	2	0	0
CO2	3	2	3	1	1	2	1	2	2	2	3	3	2	0	0
CO3	3	1	1	1	1	2	1	2	2	2	3	3	2	0	0



Subject: Pharmaceutical Engineering– Practical

Subject Code: BP208P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	My students should be able to describe various unit operations used in pharmaceutical industries mentioned in syllabus
CO 2	My students should be able to explain and practice various process involved in process.
CO 3	My students should be able understand the application of various machines used in labs and industries mentioned in syllabus.
CO 4	My students should be able to identify and summarize the material handling techniques

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7	PO8	PO9	PO1 0	PO1 1	PSO1	PSO2	PSO3	PSO4
CO1	3	3	2	2	2	2	2	1	1	1	3	3	2	0	0
CO2	3	3	2	2	2	2	2	1	1	1	3	3	2	0	0
CO3	3	3	2	2	2	2	2	1	1	1	3	3	2	0	0
CO4	3	3	2	2	2	2	2	1	1	2	3	2	2	0	0

Semester -III**Subject:** Pharmaceutical Organic Chemistry II– Theory**Subject Code:** BP301T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Draw the structures and name the various organic compounds like benzene, phenols, aromatic amines aromatic acids etc.
CO2	Explain the concepts of aromaticity of aromatic hydrocarbons.
CO3	Understand and write the aromatic electrophilic reaction name and explain effect of substitution on orientation of aromatic electrophilic reactions.
CO4	Explain the use of analytical constants in analysis of fats and oils
CO5	Relate the reactivity and stability of cyclo alkanes.
CO6	Understand and write the reaction, mechanism and outline the synthesis of benzene and its derivatives, phenols, aromatic amines and acids, polynuclear hydrocarbons and cycloalkanes like cyclopropane and cyclo butane

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3	2	3	3	2	3	2	3	3	2	0	0
CO2	3	2	3	3	2	3	2	2	3	2	3	3	2	0	0
CO3	3	2	2	3	2	3	2	2	3	2	3	3	2	0	0
CO4	3	2	2	3	2	3	2	2	3	2	3	2	2	0	0
CO5	3	2	2	3	2	3	2	2	3	2	3	2	3	0	0
CO6	3	2	2	3	2	3	2	2	3	2	3	2	3	0	0



Subject: Physical Pharmaceutics – I Theory

Subject Code: BP302T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Students shall be able to understand and describe the concept of solubility, mechanism behind solute-solvent interactions and predict the factors influencing solubility of the drugs.
CO2	Students shall be able to identify different states of matter at different condition and understand certain physicochemical properties of the drug substances.
CO3	Students shall be able to differentiate between surface and interface and identify surface and interfacial tension, classify and list different surface active agents and recall HLB scale.
CO4	Students shall be able to classify and evaluate complexation, its application, and interpret methods of analysis.
CO5	After completion of this topic, students will understand about Sorensens pH scale, pH determination applications of buffers in pharmaceutical and biological systems.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	2	1	1	2	2	2	1	2	3	2	2	3	2	0	0
CO2	2	1	2	3	2	3	2	3	2	2	3	3	2	0	0
CO3	2	2	3	3	3	3	2	3	3	1	2	3	2	0	0
CO4	2	2	3	1	2	3	2	1	2	3	3	2	2	0	0
CO5	3	2	3	2	2	2	3	2	3	2	2	2	3	0	0



Subject: Biochemistry- Theory

Subject Code: BP303T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Student will be able to Classify & explain the chemical nature & biological role of bio-molecules & also Identify the concepts of bioenergetics included in the syllabus
CO2	Student will be able to Describe the metabolic pathways for nutrient molecules in physiological and pathological condition given in the syllabus
CO3	Student will be able to Explain the Biological Oxidation process & describe the metabolic pathways for lipid metabolism, their biological significance & disorders included in the syllabus
CO4	Student will be able to Describe the amino acid metabolism & outline the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins
CO5	Student will be able to State the Biosynthesis of purine, pyrimidine nucleotides & Catabolism of purine nucleotides
CO6	Student will be able to Explain the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	2	2	3	1	2	2	1	1	2	3	2	0	0
CO2	3	2	3	2	2	3	2	2	2	2	2	3	2	0	0
CO3	3	2	3	2	2	2	1	3	2	2	2	3	2	0	0
CO4	3	3	3	2	3	2	2	2	2	2	2	2	2	0	0
CO5	3	2	3	2	2	2	1	2	2	2	2	2	3	0	0
CO6	3	2	3	3	3	2	1	2	2	2	2	2	3	0	0



Subject: Pathophysiology – Theory

Subject Code: BP 304T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Describe the etiology and pathogenesis of the selected disease states
CO 2	Understand the signs and symptoms of the diseases
CO 3	To learn and acquire the knowledge about basic mechanism of cell injury, adaptation and inflammation process
CO 4	To understand the complications of diseases /disorders

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	3	2	1	1	1	1	3	1	3	2	0	0	0
CO2	3	2	3	2	1	1	2	1	2	1	2	2	0	0	0
CO3	3	1	1	1	2	1	1	1	1	1	1	1	0	0	0
CO4	3	1	1	1	1	2	1	2	1	2	3	2	0	0	0



Subject: Pharmacognosy and Phytochemistry -I – Theory

Subject Code: BP305T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	To aware and explain the students about Scope of Pharmacognosy, Classification of Drugs and parameters required to determine the quality control of Drugs
CO 2	To Identify and perform the techniques in the cultivation and production of crude drugs
CO 3	To study and identify the crude drugs, their uses and chemical nature
CO 4	To explain the various the plant tissue culture and its application
CO 5	To explain about the various system of medicines and secondary metabolite
CO 6	To explain and understand about the biological source, chemical nature and uses of drugs of natural origin containing following drugs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PSO1	PSO2	PSO3	PSO4
CO1	3	1	3	2	0	0	0	0	0	0	0	3	0	0	0
CO2	1	2	2	3	0	0	0	0	0	0	0	3	0	0	0
CO3	1	2	3	2	0	0	0	0	0	0	0	3	0	0	0
CO4	1	2	3	3	0	0	0	0	0	0	0	2	0	0	0
CO5	3	1	2	2	0	0	0	0	0	0	0	2	0	0	0
CO6	2	1	3	3	0	0	0	0	0	0	0	2	0	0	0



Subject: Pharmaceutical Organic Chemistry II– Practical

Subject Code: BP306P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Describe about the different mechanistic steps involved in synthesis of organic compounds like benzanilide, benzoic acid etc.
CO 2	Explain different purification methods like re-crystallization and steam distillation
CO 3	Understand to determine acid value, saponification value and iodine value.
CO 4	Explain the different reaction and mechanism involved in synthesis of organic compounds like acylation, bromination, nitration, oxidation, diazotization, hydrolysis, Claisen-Schmidt reaction and Perkin reaction.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	2	2	3	3	2	3	2	3	3	2	0	0
CO2	3	3	3	2	2	3	3	2	3	2	3	3	2	0	0
CO3	3	3	3	2	2	3	2	2	3	2	3	3	2	0	0
CO4	3	3	3	2	2	2	2	2	3	2	3	2	2	0	0



Subject: Physical Pharmaceutics – I Practical

Subject Code: BP307P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Students shall be able to understand the concept of solubility, pKa value by Half Neutralization/ Henderson Hasselbalch equation and partition co-efficient of substances.
CO2	Students shall be able to understand critical solution temperature and candetermined unknown concentration in CST. Also able to understand and evaluate surface tension by drop count and drop weight method.
CO3	Students will understand about HLB, its scale and number of a surfactant andits applications. Also students will be well stood by Freundlich and Langmuir constants theory using activated charcoal
CO4	Students shall understand about the concept of surfactants, its applications and critical micellar concentration of surfactants.
CO5	Students shall understand stability constant and donor acceptor ratio of drugcomplex by solubility and pH titration method.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	2	1	1	2	2	2	1	2	3	2	2	3	2	0	0
CO2	2	1	2	3	2	3	2	3	2	2	3	3	2	0	0
CO3	2	2	3	3	3	3	2	3	3	1	2	3	2	0	0
CO4	2	2	3	1	2	3	2	1	2	3	3	2	2	0	0
CO5	3	2	3	2	2	2	3	2	3	2	2	2	3	0	0



Subject: Biochemistry Practical

Subject Code: BP308P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Student will be able to Recognize the class of biomolecules & reducing sugars given in the syllabus by qualitative analysis of the unknown sample
CO2	Student will be able to Identify the types of Protein present in the unknown sample
CO3	Student will be able to Predict the amount of essential components present in the given sample of blood mentioned in the syllabus
CO4	Student will be able to Describe the methods of preparation of buffers of different pH & their measurement
CO5	Student will be able to Study the Enzymatic Hydrolysis of starch
CO6	Student will be able to Estimate the effect of Temperature, substrate concentration on salivary amylase activity

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	3	2	2	3	1	3	2	2	3	3	3	2	0	0
CO2	3	2	3	2	3	2	3	2	2	3	2	3	2	0	0
CO3	3	3	2	2	3	1	3	2	2	3	3	3	2	0	0
CO4	3	2	3	2	3	2	3	2	2	3	2	2	2	0	0
CO5	3	3	2	2	3	1	3	2	2	3	3	2	3	0	0
CO6	3	2	3	2	3	2	3	2	2	3	2	2	3	0	0



Subject: Pharmacognosy and Phytochemistry -I - Practical

Subject Code: BP309P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	To identify and explain the equipment used in the pharmacognosy laboratory.
CO2	To perform and understand the morphological and microscopical evaluation of crude drug.
CO3	To carry out the analysis of the crude drug by chemical test.
CO4	To identify the purity and quality crude drug by quality control test.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	1	2	1	4	0	0	0	0	0	0	0	3	0	0	0
CO2	2	1	3	1	0	0	0	0	0	0	0	3	0	0	0
CO3	1	1	3	2	0	0	0	0	0	0	0	3	0	0	0
CO4	1	1	3	2	0	0	0	0	0	0	0	2	0	0	0

**Semester-IV****Subject:** Pharmaceutical Organic Chemistry III– Theory**Subject Code:** BP401T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Explain the concepts of stereo chemistry, their structural representation.
CO 2	Draw and compare the three-dimensional structure of Lactic acid and tartaric acid
CO 3	Describe and classify stereo isomerism in optical isomers with R/S nomenclature, geometrical isomers with cis-trans and E/Z nomenclature, atropisomers and conformational isomers and discuss the stability of conformation of ethane, n-butane and cyclohexane
CO 4	Describe and classify, draw and name the structures of heterocyclic compounds under study
CO 5	Understand and draw the reactions of and outline the synthesis of heterocyclic compounds under study.
CO 6	Understand and draw the reactions and mechanism of various reactions of synthetic importance under study.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	2	2	1	2	1	2	3	2	3	3	0	0	0
CO2	3	2	2	2	1	2	1	2	3	2	3	3	0	0	0
CO3	3	2	2	2	1	2	1	2	3	2	3	3	0	0	0
CO4	3	2	2	2	1	2	1	2	3	2	3	2	0	0	0
CO5	3	2	2	2	1	2	1	2	3	2	3	2	0	0	0
CO6	3	2	2	2	1	2	1	2	3	2	3	2	0	0	0



Subject: Medicinal Chemistry-I: – Theory

Subject Code: BP402T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Student shall able to memorize the different Physicochemical properties which affects biological action of drugs
CO2	Student will able to Understand drug metabolism and able to explain the factors affecting drug metabolism
CO3	Student will able to explain development , Classification, mechanism of action, uses of drugs acting on Autonomic Nervous system Also able to outline the Structure activity relationship, synthesis and biosynthesis of important drugs and neurotransmitters involve in ANS
CO4	Student will able to describe the Development, Classification mechanism of action, SAR, uses and synthesis of Sedatives and Hypnotics, Anti psychotics given in syllabus
CO5	Student will able to recognize the Development, Classification mechanism of action, SAR, uses and synthesis of, Anti-consultants and General anesthetics given in syllabus
CO6	student will able to Explain the Development, Classification mechanism of action, SAR, uses and synthesis of Narcotic, non-narcotic analgesics including Non-steroidal anti-inflammatory drugs mention in syllabus

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	3	3	1	2	2	2	2	1	3	3	2	0	0
CO2	3	1	3	1	1	3	3	1	3	1	3	3	2	0	0
CO3	3	1	3	3	1	3	3	1	3	1	3	3	2	0	0
CO4	3	1	3	3	1	3	3	1	3	1	3	2	3	0	0
CO5	3	1	3	3	1	3	3	1	3	1	3	2	3	0	0
CO6	3	1	3	3	1	3	3	1	3	1	3	2	3	0	0



Subject: Physical Pharmaceutics II – Theory

Subject Code: BP403T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	My student should be able to explain complete information about the Colloidal Dispersion as per the syllabus
CO 2	My student should be able to explain Newtonian system, Non Newtonian system and Deformation of Solids at the completion of the syllabus
CO 3	My student should be able to summarize Coarse Dispersion and can demonstrate the preparation techniques and problem in the preparation of emulsion
CO 4	My student should be able to recall micromeritics and can employ powder characteristics and its evaluation techniques in designing of dosage form like tablets.
CO 5	My student should be able to describe Drug Stability and its factor, Accelerated stability study and relate them in development of the formulation like tablets, colloidal solutions etc.
CO 6	My student should be able to apply their knowledge of physical and chemical properties of drug molecule in development of the formulation like tablets, colloidal solutions etc.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
3	1	2	1	2	2	2	2	2	2	3	3	0	0	0
3	1	2	1	2	2	2	2	2	2	3	3	0	0	0
3	1	2	1	2	2	2	2	2	2	3	3	0	0	0
3	1	2	1	2	2	2	2	2	2	3	2	0	0	0
3	1	2	1	2	2	2	2	2	2	3	2	0	0	0
3	1	2	1	2	2	2	2	2	2	3	2	0	0	0



Subject: Pharmacology-I Theory

Subject Code: BP 404T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	To understand the basic concept in pharmacology & pharmacological actions of different categories of drugs
CO2	To learn and acquire the knowledge about mechanism of drug action at receptor /organ system/sub cellular/ macromolecular levels.
CO3	To improve the applicability of the basic pharmacological knowledge in the prevention and treatment of various diseases
CO4	To learn and understand the co-relation of pharmacology with other bio medical sciences

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	3	1	1	1	2	3	2	3	3	0	0	0
CO2	3	2	3	2	1	2	1	2	2	2	3	3	0	0	0
CO3	2	3	2	1	1	2	2	2	2	1	3	3	0	0	0
CO4	3	1	3	3	1	1	2	2	3	3	3	2	0	0	0



SUBJECT NAME: Pharmaceutical Jurisprudence
SUBJECT CODE: BP405T

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Know the various laws governing the manufacturing, sale, research & usage of drugs.
CO2	Understand rationale and importance of various acts, rules and regulations governing pharmacy profession.
CO3	Apply principles of ethical practices and code of conduct as a pharmacist.
CO4	Analyze the critical requirement and procedure for licensing of Pharmaceutical products.
CO5	Evaluate and update latest amendments in various acts, rules and regulations of Pharmaceutical

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	2	0	0	0	0	0	0	3	0	1	0	0	2	0	0	0
CO2	2	0	0	0	0	0	0	3	0	2	0	0	2	0	0	0
CO3	2	0	0	0	0	0	0	3	0	2	0	0	2	0	0	0
CO4	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
CO5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0



Subject: Medicinal Chemistry-I Practical

Subject Code: BP406P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	Student will able to outline the procedure, principle, mechanism and documentation of synthesis of drugs and their intermediate given in syllabus
CO2	Student will able to describe the method for isolation, purification and characterization of drugs and intermediate given in syllabus
CO3	Student will able to perform the assay of drugs and their preparation by pharmacopoeial method for drugs given in syllabus
CO4	Student will capable to determine the partition coefficient of drugs given in syllabus

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	3	2	3	2	1	2	3	2	2	3	3	2	0	0
CO2	3	3	2	3	2	1	2	3	2	2	3	3	2	0	0
CO3	3	3	2	1	2	1	2	3	2	2	3	3	2	0	0
CO4	3	3	1	1	2	1	2	3	1	1	3	2	3	0	0



Subject: Physical Pharmaceutics II – Practical

Subject Code: BP407P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO 1	Students should be able to understand various physio chemical properties of powder, liquids in designing the dosage forms.
CO 2	Students should be able to explain physio chemical properties in the formulation development and evaluation of dosage forms
CO 3	Students should be able to identify and describe various instruments handling techniques .
CO 4	Students should be able to explain principle of chemical kinetics and to use them for stability testing.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	2	2	1	2	2	2	2	2	2	3	3	0	0	0
CO2	3	2	2	1	2	2	2	2	2	2	3	3	0	0	0
CO3	3	2	2	1	2	2	2	2	2	2	3	3	0	0	0
CO4	3	2	2	1	2	2	2	2	2	2	3	2	0	0	0



Subject:Pharmacology-I Practical

Subject Code: BP 408P

COURSE OUTCOMES	DESCRIPTION/STATEMENT
CO1	To know the knowledge about instruments and animals used in experimental pharmacology
CO2	To explain the knowledge about CPSCEA guidelines for maintenance of laboratory animals
CO3	To perform skills about blood withdrawal , collection , separation of plasma and serum along with anesthesia and euthanasia
CO4	To understand the effect of drugs on animals by simulated experiments

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	1	0	1	0	3	3	0	3	3	3	3	0	0	0
CO2	3	0	2	1	1	2	2	0	2	0	3	3	0	0	0
CO3	3	1.5	3	0	1.5	3	2.5	2.5	2.5	0	2	3	0	0	0
CO4	1	0	3	1.5	0	3	2	0	2	2.5	2.5	2	0	0	0