



# **Gokul Pharmacy College B. Pharm**

Bachelor of Pharmacy (B. Pharm)  
Batch 2022-23  
**Program Outcomes (PO)**



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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.



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# 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:



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**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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Explain the gross morphology, structure and functions of various organs of the human body
<b>CO2</b>	To learn and acquire the knowledge of homeostatic mechanisms and their imbalances
<b>CO3</b>	To study and identify the various tissues and organs of different systems along with their co-relation with human body.
<b>CO4</b>	To gain, explore and update the knowledge of special senses and nervous system

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	2	2	1	1	2	1	3	1	3	3	2	0	0
<b>CO2</b>	3	1	2	1	2	2	2	1	2	2	2	3	2	0	0
<b>CO3</b>	3	2	1	1	2	1	1	1	1	2	3	3	2	0	0
<b>CO4</b>	3	1	1	1	1	2	1	1	2	1	3	2	2	0	0



**Subject:** Pharmaceutical Analysis –Theory

**Subject Code:** BP102T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Understand the principles of volumetric titration, Calculation of Volumetric analysis, Chemical reaction and pH change during the titration.
<b>CO2</b>	Understand the principles of electro chemical analysis
<b>CO3</b>	Develop analytical skills
<b>CO4</b>	Understanding of the basic concepts of drug analysis

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	2	1	1	1	2	1	1	1	2	3	2	0	0
<b>CO2</b>	3	1	2	3	1	1	1	1	1	1	2	3	2	0	0
<b>CO3</b>	3	2	2	1	1	1	1	1	1	1	2	3	2	0	0
<b>CO4</b>	3	1	2	2	1	1	2	1	2	1	2	2	3	0	0



**Subject:** Pharmaceutics I – Theory

**Subject Code:** BP103T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	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.
<b>CO2</b>	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
<b>CO3</b>	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.
<b>CO4</b>	Students shall be able to understand about the suppositories, displacement value & its calculations. Also students will be able to understand types of Pharmaceutical incompatibilities.
<b>CO5</b>	After completion of this chapter, students will understand about various ointment bases, excipients and methods of preparation and evaluation tests of semisolids

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	2	1	1	2	2	2	2	2	2	2	3	3	2	0	0
<b>CO2</b>	3	2	2	2	3	2	2	3	2	2	2	3	2	0	0
<b>CO3</b>	3	2	2	3	3	3	3	3	2	2	3	3	2	0	0
<b>CO4</b>	3	3	2	3	2	3	3	2	3	2	2	2	2	0	0
<b>CO5</b>	3	3	3	3	3	2	3	3	2	3	3	2	3	0	0





**Subject:** Pharmaceutical Inorganic Chemistry (PIC) Theory

**Subject Code:** BP104T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Explain the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
<b>CO2</b>	Understand method of preparation, physical and chemical properties, medicinal and pharmaceutical importance of inorganic compounds.
<b>CO3</b>	Acquire the knowledge of acids, bases and buffers
<b>CO4</b>	Describe the medicinal and pharmaceutical importance of Radiopharmaceuticals.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	3	1	1	2	2	1	3	3	3	3	2	0	0
<b>CO2</b>	3	1	1	1	1	3	2	3	3	2	3	3	2	0	0
<b>CO3</b>	3	1	2	1	1	2	2	1	3	3	3	3	2	0	0
<b>CO4</b>	3	1	1	1	1	3	2	2	3	3	3	2	2	0	0

**Subject name:** COMMUNICATION SKILLS



**Subject code: BP105T**

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Understand the basics of communication and its significance in the career as a pharmacist
<b>CO2</b>	Comprehend and express any idea or thought in an effective manner using the four basic communication skills: Listening, Speaking, Reading, Writing (LSRW).
<b>CO3</b>	Make effective presentation, face job interview and participate in group communication fruitfully
<b>CO4</b>	Handle various professional communication situations more impressively and effectively
<b>CO5</b>	ce the confidence level of students and enable them to communicate in real life.
<b>CO6</b>	

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	0	0	0	0	0	1	1	0	3	2	0	0	0	0	3	2
<b>CO2</b>	0	0	0	0	0	2	1	0	3	2	0	2	0	0	3	2
<b>CO3</b>	0	0	0	0	0	1	1	0	3	1	0	3	0	0	3	3
<b>CO4</b>	0	0	0	0	0	2	2	0	3	2	0	2	0	0	3	2
<b>CO5</b>	0	0	0	0	0	2	1	0	2	1	0	3	0	0	2	3
<b>CO6</b>	0	0	0	0	0	3	2	0	2	1	0	0	0	0	2	1



**Subject name:** Remedial Mathematics

**Subject code:** BP106RMT

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	Relate the theory and applications of basic mathematics with pharmacy
<b>CO 2</b>	Discuss applications of partial fraction, limits and continuity and logarithm for pharmaceutical computation
<b>CO 3</b>	Understand calculus and analytical geometry for pharmaceutical problems solving
<b>CO 4</b>	Utilize the formulas of matrices and determinant for calculations related to pharmacy
<b>CO 5</b>	Create and evaluate differential equations used in pharmaceutical sciences

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	0	2	0	0	0	0	0	0	0	0	0	3	2	0	0
<b>CO2</b>	3	0	2	0	0	0	0	0	0	0	0	2	3	2	0	0
<b>CO3</b>	3	0	2	0	0	0	0	0	0	0	0	3	3	2	0	0
<b>CO4</b>	3	0	2	0	0	0	0	0	0	0	0	2	3	2	0	0
<b>CO5</b>	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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Identify various types of epithelial, muscular, connective and nervous tissue.
<b>CO2</b>	Identify and understand concept of axial, appendicular skeleton and separate bone
<b>CO3</b>	Expertise in collection of blood in subject to determination of values like bleeding and clotting time along with their significance in pathological conditions
<b>CO4</b>	Estimation of hemoglobin content, determination of blood group, erythrocyte sedimentation rate (ESR) and their relevance in diseases
<b>CO5</b>	Enumeration of hematological values like white blood cell (WBC) count and total red blood corpuscles (RBC) count through various methods.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	1	2	1	3	3	1	3	1	3	3	2	0	0
<b>CO2</b>	3	2	1	1	2	3	3	3	3	1	3	3	2	0	0
<b>CO3</b>	3	1	1	1	1	3	3	1	3	1	3	3	2	0	0
<b>CO4</b>	3	2	1	1	1	3	3	1	3	1	3	2	2	0	0
<b>CO5</b>	3	2	1	1	1	3	3	1	3	1	3	2	3	0	0



**Subject:** Pharmaceutical Analysis – Practical

**Subject Code:** BP108P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Student shall able to state principles of volumetric and electrochemical analysis
<b>CO2</b>	Student shall able to prepare various concentrations of solutions (Molar/Normal)
<b>CO3</b>	Student shall able to carry out various volumetric and electrochemical titrations
<b>CO4</b>	Student shall able to have analytical skills as mentioned in syllabus

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	3	1	1	2	2	1	3	3	3	3	2	0	0
<b>CO2</b>	3	1	1	1	1	3	2	3	3	2	3	3	2	0	0
<b>CO3</b>	3	1	2	1	1	2	2	1	3	3	3	3	2	0	0
<b>CO4</b>	3	1	1	1	1	3	2	2	3	3	3	2	3	0	0



**Subject:** Pharmaceutics I Practical

**Subject Code:** BP109P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Students should know about the formulation aspects of various dosage forms like syrups, elixirs and linctus.
<b>CO2</b>	Should be able to understand the procedure and various excipients used in liquid dosage forms.
<b>CO3</b>	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.
<b>CO4</b>	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.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	3	2	1	1	1	1	3	1	3	3	2	0	0
<b>CO2</b>	3	2	3	2	1	1	2	1	2	1	2	3	2	0	0
<b>CO3</b>	3	1	1	1	2	1	1	1	1	1	1	3	2	0	0
<b>CO4</b>	3	1	1	1	1	2	1	2	1	2	3	2	2	0	0



**Subject:** Pharmaceutical Inorganic Chemistry (PIC) Practical

**Subject Code:** BP110P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Perform the procedure/method for identifying impurities in pharmaceuticals.
<b>CO2</b>	Explain the procedure for identification of inorganic compounds and their impurities.
<b>CO3</b>	Understand the method of preparation of inorganic pharmaceuticals

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	3	1	1	3	1	1	3	3	3	2	0	0
<b>CO2</b>	3	2	3	1	1	3	1	1	3	3	3	2	0	0
<b>CO3</b>	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

<b>COURSE OUTCOME</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	To understand the gross morphology, structure and functions of various organs of the human body.
<b>CO2</b>	To learn the basis of various homeostatic mechanisms and their imbalances
<b>CO3</b>	To identify the various tissues and organs of different systems of human body.
<b>CO4</b>	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
<b>CO5</b>	To understand and analyze the co-ordinated working pattern of different organs system.
<b>CO6</b>	To gained the knowledge about interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	3	2	1	1	1	1	3	1	3	3	2	0	0
<b>CO2</b>	3	2	3	2	1	1	2	1	2	1	2	3	2	0	0
<b>CO3</b>	3	1	1	1	2	1	1	1	1	1	1	3	2	0	0
<b>CO4</b>	3	1	1	1	1	2	1	2	1	2	3	2	2	0	0
<b>CO5</b>	3	2	3	2	1	1	2	1	2	1	2	2	3	0	0
<b>CO6</b>	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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	Describe the classification of organic compounds and write the structure, name and the type of isomerism of the organic compounds
<b>CO 2</b>	Explain hybridization in alkanes, alkenes and alkynes, and stabilities in alkene and conjugated dienes
<b>CO 3</b>	Acquire knowledge about preparation, reactivity, properties and uses of compounds with functional groups, such as alkyl halides, alcohols, aldehydes, ketones, carboxylic acids, and amines
<b>CO 4</b>	Explain the mechanism involved in the substitution, addition, nucleophilic and elimination reactions

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	2	2	1	3	1	2	2	1	3	3	2	0	0
<b>CO2</b>	3	1	2	2	1	3	1	2	2	1	3	3	2	0	0
<b>CO3</b>	3	2	2	2	1	3	1	2	2	1	3	3	2	0	0
<b>CO4</b>	3	1	3	2	1	3	1	2	1	1	3	2	2	0	0



**Subject name:** Pharmaceutical Engineering– Theory

**Subject Code:** BP203T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	My students should be able to explain various Unit Operation mentioned as per in syllabus
<b>CO2</b>	My students should be able to demonstrate and operate various machines used in mentioned in syllabus
<b>CO3</b>	My students should be able to explain the material handling techniques as mentioned in syllabus which will also help them in research and development.
<b>CO4</b>	My students should be able to practice various steps to prevent environmental pollution
<b>CO5</b>	My students should be able to recall and describe various process involved in manufacturing of pharmaceuticals.
<b>CO6</b>	My students should be able to summarize about significance of plant-layout, corrosion and industrial hazards.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	2	2	2	2	2	2	2	2	2	3	2	0	0
<b>CO2</b>	3	1	2	2	2	2	2	2	2	2	2	3	2	0	0
<b>CO3</b>	3	1	2	2	2	2	2	2	2	2	2	3	2	0	0
<b>CO4</b>	3	1	2	2	2	2	2	2	2	2	2	2	2	0	0
<b>CO5</b>	3	1	2	2	2	2	2	2	2	2	2	2	3	0	0
<b>CO6</b>	3	1	2	2	2	2	2	2	2	2	2	2	3	0	0



**Subject name:** Computer Applications in Pharmacy.

**Subject Code:** BP204T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Know the number systems, conversion, calculations and the concept of the information systems and software in pharmacy
<b>CO2</b>	Understand various types of applications of software used in pharmacy
<b>CO3</b>	Understand the various web technologies and the different databases and various applications of databases in pharmacy.
<b>CO4</b>	Apply the knowledge of Bioinformatics Databases, and data analysis in Preclinical development like CDS, LIMS and TIMS
<b>CO5</b>	Design questionnaires, invoice tables, drug information storage and its retrieval and its side effects.
<b>CO6</b>	using word process Create a personal HTML webpage, invoice tables, generate reports and Exporting Tables, Queries, Forms and Reports

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	2	1	1	1	0	0	0	0	0	0	0	0	2	1	0	0
<b>CO2</b>	2	1	1	1	0	0	0	0	0	0	0	0	2	1	0	0
<b>CO3</b>	2	2	1	1	0	0	0	0	0	0	0	0	2	2	0	0
<b>CO4</b>	2	2	2	2	0	0	0	0	0	0	0	0	2	2	0	0
<b>CO5</b>	2	2	2	0	0	0	0	0	0	0	0	0	2	2	0	0
<b>CO6</b>	2	2	2	0	0	0	0	0	0	0	0	0	2	2	0	0



**Subject Code:** Environmental Sciences– Theory

**Subject Code:** BP205T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Student should able to explain basics of environment like ecology, ecosystem, food chain, food web and ecological pyramids
<b>CO2</b>	Student should able to describe list natural resources and explain their conservation
<b>CO3</b>	Student should able to describe the current problems of environment and how to solve them, role of individual in conservation of environment.
<b>CO4</b>	student should able to understand and identify the different types of environmental pollution and measures to minimize it
<b>CO5</b>	Student should able to understand and explain the concept of ecosystem, structure, function of forest ecosystem, grass ecosystem, desert ecosystem & aquatic ecosystem.
<b>CO6</b>	Student should able to understand the components of Ecosystem and Energy flow within it.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	0	2	2	0	0	0	0	2	2	0	0	0	0	1
<b>CO2</b>	2	3	1	3	0	0	0	0	1	2	0	0	0	0	2
<b>CO3</b>	2	0	3	2	0	1	0	0	3	2	0	0	0	0	2
<b>CO4</b>	2	0	2	3	0	0	0	0	2	2	0	0	0	0	2
<b>CO5</b>	3	2	2	2	0	0	0	0	1	0	0	0	0	0	2
<b>CO6</b>	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

<b>COURSE OUTCOME</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	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.
<b>CO2</b>	Understand the Organization and functions of brain, Spinal cord, afferent and efferent nerves.
<b>CO3</b>	Perform the anatomy and physiology of urinary system, structure of Nephron, formation of urine, mechanism of micturition and regulation of body fluid volume
<b>CO4</b>	Identify the Physiology of hormones of hypothalamus-pituitary gland, adrenal gland, thyroid gland, pancreas and gonads (testis and ovary).
<b>CO5</b>	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.
<b>CO6</b>	Explain the Anatomy and physiology of reproductive organs, pregnancy.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	2	3	1	2	0	1	2	0	3	3	2	0	0
<b>CO2</b>	3	2	2	2	1	1	0	1	2	0	3	3	2	0	0
<b>CO3</b>	3	2	3	2	1	1	0	1	3	0	3	3	2	0	0
<b>CO4</b>	3	3	2	2	1	1	0	1	1	0	3	2	2	0	0
<b>CO5</b>	3	2	2	2	1	1	0	1	3	0	3	2	3	0	0
<b>CO6</b>	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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	Acquire knowledge of, and training in systematic qualitative analysis of unknown organic compounds.
<b>CO 2</b>	Acquire knowledge of, and training in Identification of the unknown compound from the literature using melting point/ boiling point.
<b>CO 3</b>	Learn and understand the method of preparation of suitable solid derivatives from organic compounds

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	3	1	1	2	1	2	2	2	3	3	2	0	0
<b>CO2</b>	3	2	3	1	1	2	1	2	2	2	3	3	2	0	0
<b>CO3</b>	3	1	1	1	1	2	1	2	2	2	3	3	2	0	0



**Subject:** Pharmaceutical Engineering– Practical

**Subject Code:** BP208P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	My students should be able to describe various unit operations used in pharmaceutical industries mentioned in syllabus
<b>CO 2</b>	My students should be able to explain and practice various process involved in process.
<b>CO 3</b>	My students should be able understand the application of various machines used in labs and industries mentioned in syllabus.
<b>CO 4</b>	My students should be able to identify and summarize the material handling techniques

	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO1 0</b>	<b>PO1 1</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	3	2	2	2	2	2	1	1	1	3	3	2	0	0
<b>CO2</b>	3	3	2	2	2	2	2	1	1	1	3	3	2	0	0
<b>CO3</b>	3	3	2	2	2	2	2	1	1	1	3	3	2	0	0
<b>CO4</b>	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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Draw the structures and name the various organic compounds like benzene, phenols, aromatic amines aromatic acids etc.
<b>CO2</b>	Explain the concepts of aromaticity of aromatic hydrocarbons.
<b>CO3</b>	Understand and write the aromatic electrophilic reaction name and explain effect of substitution on orientation of aromatic electrophilic reactions.
<b>CO4</b>	Explain the use of analytical constants in analysis of fats and oils
<b>CO5</b>	Relate the reactivity and stability of cyclo alkanes.
<b>CO6</b>	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

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	3	3	3	2	3	3	2	3	2	3	3	2	0	0
<b>CO2</b>	3	2	3	3	2	3	2	2	3	2	3	3	2	0	0
<b>CO3</b>	3	2	2	3	2	3	2	2	3	2	3	3	2	0	0
<b>CO4</b>	3	2	2	3	2	3	2	2	3	2	3	2	2	0	0
<b>CO5</b>	3	2	2	3	2	3	2	2	3	2	3	2	3	0	0
<b>CO6</b>	3	2	2	3	2	3	2	2	3	2	3	2	3	0	0





**Subject:** Physical Pharmaceutics – I Theory

**Subject Code:** BP302T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	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.
<b>CO2</b>	Students shall be able to identify different states of matter at different condition and understand certain physicochemical properties of the drug substances.
<b>CO3</b>	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.
<b>CO4</b>	Students shall be able to classify and evaluate complexation, its application, and interpret methods of analysis.
<b>CO5</b>	After completion of this topic, students will understand about Sorensens pH scale, pH determination applications of buffers in pharmaceutical and biological systems.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	2	1	1	2	2	2	1	2	3	2	2	3	2	0	0
<b>CO2</b>	2	1	2	3	2	3	2	3	2	2	3	3	2	0	0
<b>CO3</b>	2	2	3	3	3	3	2	3	3	1	2	3	2	0	0
<b>CO4</b>	2	2	3	1	2	3	2	1	2	3	3	2	2	0	0
<b>CO5</b>	3	2	3	2	2	2	3	2	3	2	2	2	3	0	0



**Subject:** Biochemistry- Theory

**Subject Code:** BP303T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	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
<b>CO2</b>	Student will be able to Describe the metabolic pathways for nutrient molecules in physiological and pathological condition given in the syllabus
<b>CO3</b>	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
<b>CO4</b>	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
<b>CO5</b>	Student will be able to State the Biosynthesis of purine, pyrimidine nucleotides & Catabolism of purine nucleotides
<b>CO6</b>	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

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	2	2	3	1	2	2	1	1	2	3	2	0	0
<b>CO2</b>	3	2	3	2	2	3	2	2	2	2	2	3	2	0	0
<b>CO3</b>	3	2	3	2	2	2	1	3	2	2	2	3	2	0	0
<b>CO4</b>	3	3	3	2	3	2	2	2	2	2	2	2	2	0	0
<b>CO5</b>	3	2	3	2	2	2	1	2	2	2	2	2	3	0	0
<b>CO6</b>	3	2	3	3	3	2	1	2	2	2	2	2	3	0	0



**Subject:** Pathophysiology – Theory

**Subject Code:** BP 304T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	Describe the etiology and pathogenesis of the selected disease states
<b>CO 2</b>	Understand the signs and symptoms of the diseases
<b>CO 3</b>	To learn and acquire the knowledge about basic mechanism of cell injury, adaptation and inflammation process
<b>CO 4</b>	To understand the complications of diseases /disorders

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	3	2	1	1	1	1	3	1	3	2	0	0	0
<b>CO2</b>	3	2	3	2	1	1	2	1	2	1	2	2	0	0	0
<b>CO3</b>	3	1	1	1	2	1	1	1	1	1	1	1	0	0	0
<b>CO4</b>	3	1	1	1	1	2	1	2	1	2	3	2	0	0	0



**Subject:** Pharmacognosy and Phytochemistry -I – Theory

**Subject Code:** BP305T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	To aware and explain the students about Scope of Pharmacognosy, Classification of Drugs and parameters required to determine the quality control of Drugs
<b>CO 2</b>	To Identify and perform the techniques in the cultivation and production of crude drugs
<b>CO 3</b>	To study and identify the crude drugs, their uses and chemical nature
<b>CO 4</b>	To explain the various the plant tissue culture and its application
<b>CO 5</b>	To explain about the various system of medicines and secondary metabolite
<b>CO 6</b>	To explain and understand about the biological source, chemical nature and uses of drugs of natural origin containing following drugs

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO1 1</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	3	2	0	0	0	0	0	0	0	3	0	0	0
<b>CO2</b>	1	2	2	3	0	0	0	0	0	0	0	3	0	0	0
<b>CO3</b>	1	2	3	2	0	0	0	0	0	0	0	3	0	0	0
<b>CO4</b>	1	2	3	3	0	0	0	0	0	0	0	2	0	0	0
<b>CO5</b>	3	1	2	2	0	0	0	0	0	0	0	2	0	0	0
<b>CO6</b>	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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Students shall be able to understand the concept of solubility, pKa value by Half Neutralization/ Henderson Hasselbalch equation and partition co-efficient of substances.
<b>CO2</b>	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.
<b>CO3</b>	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
<b>CO4</b>	Students shall understand about the concept of surfactants, its applications and critical micellar concentration of surfactants.
<b>CO5</b>	Students shall understand stability constant and donor acceptor ratio of drugcomplex by solubility and pH titration method.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	2	1	1	2	2	2	1	2	3	2	2	3	2	0	0
<b>CO2</b>	2	1	2	3	2	3	2	3	2	2	3	3	2	0	0
<b>CO3</b>	2	2	3	3	3	3	2	3	3	1	2	3	2	0	0
<b>CO4</b>	2	2	3	1	2	3	2	1	2	3	3	2	2	0	0
<b>CO5</b>	3	2	3	2	2	2	3	2	3	2	2	2	3	0	0



**Subject:** Biochemistry Practical

**Subject Code:** BP308P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Student will be able to Recognize the class of biomolecules & reducing sugars given in the syllabus by qualitative analysis of the unknown sample
<b>CO2</b>	Student will be able to Identify the types of Protein present in the unknown sample
<b>CO3</b>	Student will be able to Predict the amount of essential components present in the given sample of blood mentioned in the syllabus
<b>CO4</b>	Student will be able to Describe the methods of preparation of buffers of different pH & their measurement
<b>CO5</b>	Student will be able to Study the Enzymatic Hydrolysis of starch
<b>CO6</b>	Student will be able to Estimate the effect of Temperature, substrate concentration on salivary amylase activity

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	3	2	2	3	1	3	2	2	3	3	3	2	0	0
<b>CO2</b>	3	2	3	2	3	2	3	2	2	3	2	3	2	0	0
<b>CO3</b>	3	3	2	2	3	1	3	2	2	3	3	3	2	0	0
<b>CO4</b>	3	2	3	2	3	2	3	2	2	3	2	2	2	0	0
<b>CO5</b>	3	3	2	2	3	1	3	2	2	3	3	2	3	0	0
<b>CO6</b>	3	2	3	2	3	2	3	2	2	3	2	2	3	0	0



**Subject:** Pharmacognosy and Phytochemistry -I - Practical

**Subject Code:** BP309P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	To identify and explain the equipment used in the pharmacognosy laboratory.
<b>CO2</b>	To perform and understand the morphological and microscopical evaluation of crude drug.
<b>CO3</b>	To carry out the analysis of the crude drug by chemical test.
<b>CO4</b>	To identify the purity and quality crude drug by quality control test.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	1	2	1	4	0	0	0	0	0	0	0	3	0	0	0
<b>CO2</b>	2	1	3	1	0	0	0	0	0	0	0	3	0	0	0
<b>CO3</b>	1	1	3	2	0	0	0	0	0	0	0	3	0	0	0
<b>CO4</b>	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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	Explain the concepts of stereo chemistry, their structural representation.
<b>CO 2</b>	Draw and compare the three-dimensional structure of Lactic acid and tartaric acid
<b>CO 3</b>	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
<b>CO 4</b>	Describe and classify, draw and name the structures of heterocyclic compounds under study
<b>CO 5</b>	Understand and draw the reactions of and outline the synthesis of heterocyclic compounds under study.
<b>CO 6</b>	Understand and draw the reactions and mechanism of various reactions of synthetic importance under study.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	2	2	1	2	1	2	3	2	3	3	0	0	0
<b>CO2</b>	3	2	2	2	1	2	1	2	3	2	3	3	0	0	0
<b>CO3</b>	3	2	2	2	1	2	1	2	3	2	3	3	0	0	0
<b>CO4</b>	3	2	2	2	1	2	1	2	3	2	3	2	0	0	0
<b>CO5</b>	3	2	2	2	1	2	1	2	3	2	3	2	0	0	0
<b>CO6</b>	3	2	2	2	1	2	1	2	3	2	3	2	0	0	0



**Subject:** Medicinal Chemistry-I: – Theory

**Subject Code:** BP402T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Student shall able to memorize the different Physicochemical properties which affects biological action of drugs
<b>CO2</b>	Student will able to Understand drug metabolism and able to explain the factors affecting drug metabolism
<b>CO3</b>	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
<b>CO4</b>	Student will able to describe the Development, Classification mechanism of action, SAR, uses and synthesis of Sedatives and Hypnotics, Anti psychotics given in syllabus
<b>CO5</b>	Student will able to recognize the Development, Classification mechanism of action, SAR, uses and synthesis of, Anti-consultants and General anesthetics given in syllabus
<b>CO6</b>	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

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	3	3	1	2	2	2	2	1	3	3	2	0	0
<b>CO2</b>	3	1	3	1	1	3	3	1	3	1	3	3	2	0	0
<b>CO3</b>	3	1	3	3	1	3	3	1	3	1	3	3	2	0	0
<b>CO4</b>	3	1	3	3	1	3	3	1	3	1	3	2	3	0	0
<b>CO5</b>	3	1	3	3	1	3	3	1	3	1	3	2	3	0	0
<b>CO6</b>	3	1	3	3	1	3	3	1	3	1	3	2	3	0	0



**Subject:** Physical Pharmaceutics II – Theory

**Subject Code:** BP403T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	My student should be able to explain complete information about the Colloidal Dispersion as per the syllabus
<b>CO 2</b>	My student should be able to explain Newtonian system, Non Newtonian system and Deformation of Solids at the completion of the syllabus
<b>CO 3</b>	My student should be able to summarize Coarse Dispersion and can demonstrate the preparation techniques and problem in the preparation of emulsion
<b>CO 4</b>	My student should be able to recall micromeritics and can employ powder characteristics and its evaluation techniques in designing of dosage form like tablets.
<b>CO 5</b>	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.
<b>CO 6</b>	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.

<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
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

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	To understand the basic concept in pharmacology & pharmacological actions of different categories of drugs
<b>CO2</b>	To learn and acquire the knowledge about mechanism of drug action at receptor /organ system/sub cellular/ macromolecular levels.
<b>CO3</b>	To improve the applicability of the basic pharmacological knowledge in the prevention and treatment of various diseases
<b>CO4</b>	To learn and understand the co-relation of pharmacology with other bio medical sciences

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	3	3	1	1	1	2	3	2	3	3	0	0	0
<b>CO2</b>	3	2	3	2	1	2	1	2	2	2	3	3	0	0	0
<b>CO3</b>	2	3	2	1	1	2	2	2	2	1	3	3	0	0	0
<b>CO4</b>	3	1	3	3	1	1	2	2	3	3	3	2	0	0	0



**SUBJECT NAME:** Pharmaceutical Jurisprudence  
**SUBJECT CODE:** BP405T

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Know the various laws governing the manufacturing, sale, research & usage of drugs.
<b>CO2</b>	Understand rationale and importance of various acts, rules and regulations governing pharmacy profession.
<b>CO3</b>	Apply principles of ethical practices and code of conduct as a pharmacist.
<b>CO4</b>	Analyze the critical requirement and procedure for licensing of Pharmaceutical products.
<b>CO5</b>	Evaluate and update latest amendments in various acts, rules and regulations of Pharmaceutical

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	2	0	0	0	0	0	0	3	0	1	0	0	2	0	0	0
<b>CO2</b>	2	0	0	0	0	0	0	3	0	2	0	0	2	0	0	0
<b>CO3</b>	2	0	0	0	0	0	0	3	0	2	0	0	2	0	0	0
<b>CO4</b>	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
<b>CO5</b>	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0



**Subject:** Medicinal Chemistry-I Practical

**Subject Code:** BP406P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	Student will able to outline the procedure, principle, mechanism and documentation of synthesis of drugs and their intermediate given in syllabus
<b>CO2</b>	Student will able to describe the method for isolation, purification and characterization of drugs and intermediate given in syllabus
<b>CO3</b>	Student will able to perform the assay of drugs and their preparation by pharmacopoeial method for drugs given in syllabus
<b>CO4</b>	Student will capable to determine the partition coefficient of drugs given in syllabus

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	3	2	3	2	1	2	3	2	2	3	3	2	0	0
<b>CO2</b>	3	3	2	3	2	1	2	3	2	2	3	3	2	0	0
<b>CO3</b>	3	3	2	1	2	1	2	3	2	2	3	3	2	0	0
<b>CO4</b>	3	3	1	1	2	1	2	3	1	1	3	2	3	0	0



**Subject:** Physical Pharmaceutics II – Practical

**Subject Code:** BP407P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO 1</b>	Students should be able to understand various physio chemical properties of powder, liquids in designing the dosage forms.
<b>CO 2</b>	Students should be able to explain physio chemical properties in the formulation development and evaluation of dosage forms
<b>CO 3</b>	Students should be able to identify and describe various instruments handling techniques .
<b>CO 4</b>	Students should be able to explain principle of chemical kinetics and to use them for stability testing.

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	2	2	1	2	2	2	2	2	2	3	3	0	0	0
<b>CO2</b>	3	2	2	1	2	2	2	2	2	2	3	3	0	0	0
<b>CO3</b>	3	2	2	1	2	2	2	2	2	2	3	3	0	0	0
<b>CO4</b>	3	2	2	1	2	2	2	2	2	2	3	2	0	0	0



**Subject:**Pharmacology-I Practical

**Subject Code:** BP 408P

<b>COURSE OUTCOMES</b>	<b>DESCRIPTION/STATEMENT</b>
<b>CO1</b>	To know the knowledge about instruments and animals used in experimental pharmacology
<b>CO2</b>	To explain the knowledge about CPSCEA guidelines for maintenance of laboratory animals
<b>CO3</b>	To perform skills about blood withdrawal , collection , separation of plasma and serum along with anesthesia and euthanasia
<b>CO4</b>	To understand the effect of drugs on animals by simulated experiments

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>
<b>CO1</b>	3	1	0	1	0	3	3	0	3	3	3	3	0	0	0
<b>CO2</b>	3	0	2	1	1	2	2	0	2	0	3	3	0	0	0
<b>CO3</b>	3	1.5	3	0	1.5	3	2.5	2.5	2.5	0	2	3	0	0	0
<b>CO4</b>	1	0	3	1.5	0	3	2	0	2	2.5	2.5	2	0	0	0