



Shri Vile Parle Kelavani Mandal's INSTITUTE OF PHARMACY, DHULE

Approved by PCI, AICTE, DTE; Affiliated to DBATU, Lonere & MSBTE, Mumbai

Vision: To pursue excellence in pharmaceutical education and research to develop competent professionals.

Since 1934

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1. Course Outcomes (COs)

Course Name	Course Code	Course Outcomes	
B. Pharm 1st Sem			
Human Anatomy and Physiology I Theory	BP101T	C101.1	Discuss anatomy and physiology of human body, cellular and tissue level of organization. (<i>Level 2</i>)
		C101.2	Explain anatomical, and physiological role of skin, skeletal system, joints, and blood with their abnormalities. (<i>Level 2</i>)
		C101.3	Explain anatomical, physiological and homeostical role of lymphatic, and cardiovascular system with their abnormalities. (<i>Level 3</i>)
		C101.4	Explain structural and functional aspect of peripheral nervous system and special senses. (<i>Level 2</i>)
Pharmaceutical Analysis I Theory	BP102T	C102.1	Explain the name and the type of isomerism of the organic compounds. (<i>Level 2</i>)
		C102.2	Explain the methods of preparation, mechanism of reactions, uses of alkanes, methods of preparation, mechanism, stereochemistry, orientation of reactions and stability of alkenes and conjugated dienes. (<i>Level 2</i>)
		C102.3	Explain the methods of preparation, mechanism, of reactions of aldehydes and ketones, Qualitative tests for aldehydes and ketones, Structure and uses of some carbonyl compounds. (<i>Level 2</i>)
		C102.4	Explain the methods of preparation, mechanism, of reactions of carboxylic acids and amines, Qualitative tests for carboxylic acids, their functional derivatives and amines, Structure and uses of some acids and amines. (<i>Level 2</i>)
Pharmaceutics I Theory	BP103T	C103.1	Understand history of profession of Pharmacy in India & Pharmacopeia and its development. Learn parts and handling of prescription, posology & dose calculation of drug in children in different types of dosage form. (<i>Level-5</i>)
		C103.2	Elaborate different pharmaceutical calculation involved in formulation and understand basic requirement and

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			formulation of powder and liquid (monophasic & biphasic) dosages form. (Level-5)
		C103.3	Explain type of pharmaceutical incompatibility and understand basic requirement, formulation and evaluation of suppositories and pessaries. (Level-5)
		C103.4	Understand the mechanisms of drug penetration and also the factors influencing permeation through transdermal route and explain the formulation and evaluation of semisolid preparation such as ointment, gel cream etc. (Level-2)
Pharmaceutical Inorganic Chemistry Theory	BP104T	C104.1	Define and discuss the various pharmacopoeia (I.P., B.P., U.S.P, E.U) and compare the inorganic impurities found in pharmaceutical products by concept of limit tests of chloride, sulphate, arsenic, heavy metals, and lead as well as prepare and calculate the buffer solution, isotonicity, and adjust isotonicity by various methods. (Level 1)
		C104.2	Discuss and examine the functions of major extra-and intracellular physiological ions, applications of dental products, and categorise acidifiers and antacids as GIT agents. (Level 3)
		C104.3	Discuss & explain the application of GIT agents (Cathartics, Antimicrobials) and Miscellaneous agents like (Expectorant, Emetics, Heamtinics) (Level 3)
		C104.4	Define & Explain poison, antidote, and astringent, as well as the application of radioactive substances in pharmacy. (Level 3)
Communication Skills Theory	BP105T	C105.1	Describe communication process and role of perspective to overcome communicative barriers to establish communication. (Level 1)
		C105.2	Illustrate effective communication: verbally and non-verbally with Communication Style Matrix and LSRW. (Level 3)
		C105.3	Identify interview-process along with effective presentation. (Level 1)
		C105.4	Recognize leadership to foster leadership attributes. (Level 1)
Human Anatomy and Physiology		C107.1	Identify the structure and functions of microscope and microscopy of different tissues and determine and

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Practical	BP107P		estimate clotting and bleeding time. <i>(Level 2)</i>
		C107.2	Describe and determine hemocytometry, WBCs and RBCs count. <i>(Level 3)</i>
		C107.3	Determine and estimate haemoglobin content, and identify the structure and functions of bones of skeletal system. <i>(Level 2)</i>
		C107.4	Determine and record blood group, erythrocyte sedimentation rate (ESR) heart rate, pulse rate and blood pressure. <i>(Level 3)</i>
Pharmaceutical Analysis I Practical	BP108P	C108.1	Explain the Principle, Mechanism and theory behind the Experimental. <i>(Level 3)</i>
		C108.2	Perform the limit test, compare and interpret the result. <i>(Level 3)</i>
		C108.3	Identify, prepare and determine the purity of compound. <i>(Level 4)</i>
		C108.4	Explain the basic concept theoretical aspects of inorganic chemistry. <i>(Level 2)</i>
Pharmaceutics I Practical	BP109P	C109.1	Understand the basic principles used in preparation of solid, liquid and semi solid dosage forms. <i>(Level 2)</i>
		C109.2	Formulate monophasic liquid dosage form, solid dosage form. <i>(Level 3)</i>
		C109.3	Formulate biphasic liquid dosage form, semisolid dosage form. <i>(Level 3)</i>
		C109.4	Apply the knowledge in preparation of various conventional dosage forms <i>(Level 3)</i>
Pharmaceutical Inorganic Chemistry Practical	BP110P	C110.1	Explain the Principle, Mechanism and theory behind the Experimental. <i>(Level 2)</i>
		C110.2	Perform the limit test, compare and interpret the result. <i>(Level 3)</i>
		C110.3	Identify, prepare and determine the purity of compound. <i>(Level 3)</i>
		C110.4	Explain the basic concept theoretical aspects of inorganic chemistry. <i>(Level 3)</i>
B. Pharm 2nd Sem			
Human Anatomy and Physiology II Theory		C201.1	Describe basic organization of nervous system, and anatomy and physiology of central nervous system. <i>(Level 2)</i>

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	BP201T	C201.2	Describe the anatomy, physiology and disorders of digestive and respiratory system, along with basics of energetics. <i>(Level 2)</i>
		C201.3	Describe the anatomy, physiology and disorders of urinary and endocrine system. <i>(Level 2)</i>
		C201.4	Describe the anatomy, physiology and disorders of male and female reproductive system along with basics of genetics. <i>(Level 2)</i>
Pharmaceutical Organic Chemistry I Theory	BP202T	C202.1	Explain the name and the type of isomerism of the organic compounds. <i>(Level 2)</i>
		C202.2	Explain the methods of preparation, mechanism of reactions, uses of alkanes, methods of preparation, mechanism, stereochemistry, orientation of reactions and stability of alkenes and conjugated dienes. <i>(Level 2)</i> .
		C202.3	Explain the methods of preparation, mechanism, of reactions of aldehydes and ketones, Qualitative tests for aldehydes and ketones, Structure and uses of some carbonyl compounds. <i>(Level 2)</i>
		C202.4	Explain the methods of preparation, mechanism, of reactions of carboxylic acids and amines, Qualitative tests for carboxylic acids, their functional derivatives and amines, Structure and uses of some acids and amines. <i>(Level 2)</i>
Biochemistry Theory	BP203T	C203.1	Illustrate the basic concept of Bioenergetics, elaborate energy rich compounds with respect classes & biological significance. Classify biological molecules with their chemical nature & biological roles as well as explain the Biological Oxidation Mechanism. <i>(Level 3)</i>
		C203.2	Explain the concept of Carbohydrate metabolism. Illustrate various pathways involved in carbohydrate metabolism and Lipid Metabolism with significance. <i>(Level 3)</i>
		C203.3	Describe pathways and mechanism involved in Amino acid and Nucleic acid Metabolism with their significance and associated disorders. Explain biosynthesis of nucleotide, Structure of DNA & RNA with their function. <i>(Level 3)</i>
		C203.4	Demonstrate the DNA replication, RNA transcription & genetic code translation and Discuss enzymes with

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			respect to properties, Nomenclature, and Classes. Understand & elaborate the concept of enzyme kinetics, Enzyme inhibitors, enzyme regulation, and Co-enzymes. Enlist therapeutic and diagnostic applications of enzymes and isoenzymes. <i>(Level 4)</i>
Pathophysiology Theory	BP204T	C204.1	Describe the principles of Cell Injury and Adaptation, mechanisms involved in inflammation and repair. <i>(Level 1)</i>
		C204.2	Outline the etiology and pathogenesis of the selected diseases of cardiovascular, respiratory and renal system along with hematological diseases. <i>(Level 1)</i>
		C204.3	Summarize the etiology and pathogenesis of the principles of the cancer, infectious diseases and sexually transmitted diseases. <i>(Level 2)</i>
		C204.4	Describe the etiology and pathogenesis of the selected diseases of endocrine, nervous and gastrointestinal system along with diseases of the joints. <i>(Level 1)</i>
Computer Applications in Pharmacy Theory	BP205T	C205.1	Summarize the concept of number system in computers. <i>(Level2)</i>
		C205.2	Make use of web technologies such as HTML, XML, CSS, Programming languages, Web servers and pharmacy drug database. <i>(Level 3)</i>
		C205.3	Explain the applications of computers in pharmacy such as drug information services, pharmacokinetics, mathematical model in drug Design, hospital and clinical pharmacy etc. and illustrate the applications of computers for data analysis in preclinical development. <i>(Level 4)</i>
		C205.4	Discuss the bioinformatics and its impact in vaccine discovery. <i>(Level2)</i>
Human Anatomy and Physiology II –Practical	BP207P	C207.1	Identify and describe integumentary, special senses, nervous system and endocrine system using specimens, models, etc. <i>(Level 2)</i>
		C207.2	To demonstrate general neurological examination, visual activity, reflex activity, olfactory nerve and examine types of taste. <i>(Level 2)</i>
		C207.3	Demonstrate and determine body temperature, feedback mechanism and tidal volume and tidal capacity. <i>(Level 2)</i>

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		C207.4	Discuss various body systems and record and identify basal mass index, different family planning devices, permanent slides and determine total blood count. <i>(Level 3)</i>
Pharmaceutical Organic Chemistry I Practical	BP208P	C208.1	CO 208.1 Explain the Principle, Mechanism and theory behind the Experimental. <i>(Level 2)</i>
		C208.2	CO 208.2 Perform the limit test, compare and interpret the result. <i>(Level 2)</i>
		C208.3	CO 208.3 Identify, prepare and determine the purity of compound. <i>(Level 4)</i>
		C208.4	CO 208.4 Explain the basic concept theoretical aspects of inorganic chemistry. <i>(Level 4)</i>
Biochemistry Practical	BP209P	C209.1	Explain the Principle, Mechanism and theory behind the Experimental. <i>(Level 3)</i>
		C209.2	Perform the qualitative analysis of given sample of carbohydrate, protein, normal and abnormal constituent of urine sample as well as well as determination of blood sugar and creatinine, serum cholesterol, prepare and measurement of pH of buffer solution and interpret the data after calculation to find value. <i>(Level 3)</i>
		C209.3	Perform the quantitative analysis of reducing sugars and protein as well as determination of salivary amylase activity with effect of temperature and substrate concentration on it. <i>(Level 3)</i>
		C209.4	Explain the basic concept theoretical aspects of inorganic chemistry. <i>(Level 3)</i>
Computer Applications in Pharmacy Practical	BP210P	C210.1	Use MS Word to create questionnaires and other documentation related to pharmacy using number system. <i>(Level 3)</i>
		C210.2	Creating mailing labels Using Label Wizard, generating labels in MS WORD also Create database, HTML web page. <i>(Level 5)</i>
		C210.3	Design a form in MS Access to modify the databases created used in Bioinformatics. <i>(Level 5)</i>
		C210.4	Produce report; work with queries on MS Access and operate web and XML pages to export table, forms and queries. <i>(Level 3)</i>

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