



Crescent School of Pharmacy I B. Pharm. I Semester

| Code & Course | Scope | Objectives |
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| BP101T Human Anatomy and Physiology-I | This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. It also helps in understanding both homeostatic mechanisms. The subject provides the basic knowledge required to understand the various disciplines of pharmacy | <ol style="list-style-type: none">1. Explain the gross morphology, structure and functions of various organs of the human body.2. Describe the various homeostatic mechanisms and their imbalances.3. Identify the various tissues and organs of different systems of human body.4. Perform the various experiments related to special senses and nervous system.5. Appreciate coordinated working pattern of different organs of each system |
| BP102T Pharmaceutical Analysis-I | This course deals with the fundamentals of analytical chemistry and principles of electrochemical analysis of drugs. | <ol style="list-style-type: none">1. Understand the principles of volumetric and electro chemical analysis.2. Carryout various volumetric and electrochemical titrations.3. Develop analytical skills. |
| BP103T Pharmaceutics-I | This course is designed to impart a fundamental knowledge on the preparatory pharmacy with arts and science of preparing the different conventional dosage forms. | <ol style="list-style-type: none">1. Know the history of profession of pharmacy.2. Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations.3. Understand the professional way of handling the prescription.4. Preparation of various conventional dosage forms. |
| BP104T: Pharmaceutical Inorganic Chemistry | This subject deals with the monographs of inorganic drugs and pharmaceuticals. | <ol style="list-style-type: none">1. Know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals.2. Understand the medicinal and pharmaceutical importance of inorganic compounds. |
| BP105T Communication Skills | This course will prepare the young pharmacy student to interact effectively with doctors, nurses, dentists, physiotherapists and other health workers. At the end of this course the student will get the soft skills set to work cohesively with the team as a team player and will add value to the pharmaceutical business. | <ol style="list-style-type: none">1. Understand the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation.2. Communicate effectively (Verbal and Non Verbal).3. Effectively manage the team as a team player.4. Develop interview skills.5. Develop Leadership qualities and essentials. |



Crescent School of Pharmacy
I B. Pharm. II Semester

| Code & Course | Scope | Objectives |
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| BP201T Human anatomy and physiology-II | This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. It also helps in understanding both homeostatic mechanisms. The subject provides the basic knowledge required to understand the various disciplines of pharmacy. | <ol style="list-style-type: none">1.Explain the gross morphology, structure and functions of various organs of the human body.2.Describe the various homeostatic mechanisms and their imbalances.3.Identify the various tissues and organs of different systems of human body.4.Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time etc., and also record blood pressure, heart rate, pulse and respiratory volume.5.Appreciate coordinated working pattern of different organs of each system6. Appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body |
| BP202T Pharmaceutical Organic Chemistry-I | This subject deals with classification and nomenclature of simple organic compounds, structural isomerism, intermediates forming in reactions, important physical properties, reactions and methods of preparation of these compounds. The syllabus also emphasizes on mechanisms and orientation of reactions. | <ol style="list-style-type: none">1.Write the structure, name and the type of isomerism of the organic compound2.Write the reaction, name the reaction and orientation of reactions3. Account for reactivity/stability of compounds,4. Identify/confirm the identification of organic compound. |
| BP203T Biochemistry | Biochemistry deals with complete understanding of the molecular levels of the chemical process associated with living cells. The scope of the subject is providing biochemical facts and the principles to understand metabolism of nutrient molecules in physiological and pathological conditions. It is also emphasizing on genetic organization of mammalian genome and hetero & autocatalytic functions of DNA. | <ol style="list-style-type: none">1.Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes.2.Understand the metabolism of nutrient molecules in physiological and pathological conditions.3.Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins. |
| BP204T: Pathophysiology | Pathophysiology is the study of causes of diseases and reactions of the body to such disease producing causes. This course is designed to impart a thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic pathophysiological mechanisms. Hence it will not only help to study the syllabus of pathology, but also to get baseline knowledge required to practice medicine safely, confidently, rationally and effectively. | <ol style="list-style-type: none">1.Describe the etiology and pathogenesis of the selected disease states.2.Name the signs and symptoms of the diseases.3.Mention the complications of the diseases. |
| BP205T Computer Applications in Pharmacv | This subject deals with the introduction Database, Database Management system and computer application in clinical studies and use of databases. | <ol style="list-style-type: none">1. Know the various types of application of computers in pharmacy.2. Know the various types of databases.3. Know the various applications of databases in pharmacy. |



Crescent School of Pharmacy
II B. Pharm. III Semester

| Code & Course | Scope | Objectives |
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| BP301T: Pharmaceutical Organic Chemistry-II | This subject deals with general methods of preparation and reactions of some organic compounds. Reactivity of organic compounds is also studied here. The syllabus emphasizes on mechanisms and orientation of reactions. Chemistry of fats and oils are also included in the syllabus. | <ol style="list-style-type: none">1. Write the structure, name and the type of isomerism of the organic compound.2. Write the reaction, name the reaction and orientation of reactions.3. Account for reactivity/stability of compounds.4. Prepare organic compounds. |
| BP302T: Physical Pharmaceutics-I | The course deals with the various physical and physicochemical properties, and principles involved in dosage forms/formulations. Theory and practical components of the subject help the student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms. | <ol style="list-style-type: none">1. Understand various physicochemical properties of drug molecules in the designing the dosage forms.2. Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations.3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms. |
| BP303T: Pharmaceutical Microbiology | Study of all categories of microorganisms especially for the production of alcohol antibiotics, vaccines, vitamins enzymes etc. | <ol style="list-style-type: none">1. Understand methods of identification, cultivation and preservation of various microorganisms2. To understand the importance and implementation of sterilization in pharmaceutical processing and industry3. Learn sterility testing of pharmaceutical products.4. Carried out microbiological standardization of Pharmaceuticals.5. Understand the cell culture technology and its applications in pharmaceutical industries. |
| BP304T: Pharmaceutical Engineering | This course is designed to impart a fundamental knowledge on the art and science of various unit operations used in pharmaceutical industry. | <ol style="list-style-type: none">1. To know various unit operations used in Pharmaceutical industries.2. To understand the material handling techniques.3. To perform various processes involved in pharmaceutical manufacturing process.4. To carry out various test to prevent environmental pollution.5. To appreciate and comprehend significance of plant lay out design for optimum use of resources.6. To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries. |



Crescent School of Pharmacy

II B. Pharm. IV Semester

| Code & Course | Scope | Objectives |
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| BP401T: Pharmaceutical Organic Chemistry-III | This subject imparts knowledge on stereo-chemical aspects of organic compounds and organic reactions, important named reactions, chemistry of important hetero cyclic compounds. It also emphasizes on medicinal and other uses of organic compounds. | <ol style="list-style-type: none">1. Understand the methods of preparation and properties of organic compounds.2. Explain the stereo chemical aspects of organic compounds and stereo chemical reactions.3. Know the medicinal uses and other applications of organic compounds. |
| BP402T: Medicinal Chemistry-I | This This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasizes on structure activity relationships of drugs, importance of physicochemical properties and metabolism of drugs. The syllabus also emphasizes on chemical synthesis of important drugs under each class. | <ol style="list-style-type: none">1. Understand the chemistry of drugs with respect to their pharmacological activity2. Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs3. Know the Structural Activity Relationship (SAR) of different class of drugs4. Write the chemical synthesis of some drugs. |
| BP403T: Physical Pharmaceutics-II | The course deals with the various physical and physicochemical properties, and principles involved in dosage forms/formulations. Theory and practical components of the subject help the student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms. | <ol style="list-style-type: none">1. Understand various physicochemical properties of drug molecules in the designing the dosage forms.2. Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations.3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms. |
| BP404T: Pharmacology-I | The main purpose of the subject is to understand what drugs do to the living organisms and how their effects can be applied to therapeutics. The subject covers the information about the drugs like, mechanism of action, physiological and biochemical effects (pharmacodynamics) as well as absorption, distribution, metabolism and excretion (pharmacokinetics) along with the adverse effects, clinical uses, interactions, doses, contraindications and routes of administration of different classes of drugs. | <ol style="list-style-type: none">1. Understand the pharmacological actions of different categories of drugs2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.4. Observe the effect of drugs on animals by simulated experiments5. Appreciate correlation of pharmacology with other bio medical sciences. |
| BP405T: Pharmacognosy and Phytochemistry I | The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties. | <ol style="list-style-type: none">1. To know the techniques in the cultivation and production of crude drugs.2. To know the crude drugs, their uses and chemical nature.3. Know the evaluation techniques for the herbal drugs.4. To carry out the microscopic and morphological evaluation of crude drugs.5. Develop Leadership qualities and essentials. |



Crescent School of Pharmacy

III B. Pharm. V Semester

| Code & Course | Scope | Objectives |
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| BP501T: Medicinal Chemistry-II | This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasizes on structure activity relationships of drugs, importance of physicochemical properties and metabolism of drugs. The syllabus also emphasizes on chemical synthesis of important drugs under each class. | <ol style="list-style-type: none">1. Understand the chemistry of drugs with respect to their pharmacological activity.2. Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs.3. Know the Structural Activity Relationship of different class of drugs.4. Study the chemical synthesis of selected drugs. |
| BP502T: Industrial Pharmacy-I | Course enables the student to understand and appreciate the influence of pharmaceutical additives and various pharmaceutical dosage forms on the performance of the drug product. | <ol style="list-style-type: none">1. Know the various pharmaceutical dosage forms and their manufacturing techniques.2. Know various considerations in development of pharmaceutical dosage forms.3. Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality. |
| BP503T: Pharmacology-II | This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body and in addition, emphasis on the basic concepts of bioassay. | <ol style="list-style-type: none">1. Understand the mechanism of drug action and its relevance in the treatment of different diseases.2. Demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments.3. Demonstrate the various receptor actions using isolated tissue preparation.4. Appreciate correlation of pharmacology with related medical sciences. |
| BP504T: Pharmacognosy and Phytochemistry-II | The main purpose of subject is to impart the students the knowledge of how the secondary metabolites are produced in the crude drugs, how to isolate and identify and produce them industrially. Also this subject involves the study of producing the plants and phytochemicals through plant tissue culture, drug interactions and basic principles of traditional system of medicine. | <ol style="list-style-type: none">1. To know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents.2. To understand the preparation and development of herbal formulation.3. To understand the herbal drug interactions.4. To carryout isolation and identification of phytoconstituents. |
| BP505T: Pharmaceutical Jurisprudence | This course is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India. | <ol style="list-style-type: none">1. The Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.2. Various Indian Pharmaceutical Acts and Laws3. The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals4. The code of ethics during the pharmaceutical practice. |



Crescent School of Pharmacy

III B. Pharm. VI Semester

| Code & Course | Scope | Objectives |
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| BP601T: Medicinal Chemistry-III | This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasis on modern techniques of rational drug design like quantitative structure activity relationship (QSAR), Prodrug concept, combinatorial chemistry and Computer aided drug design (CADD). The subject also emphasizes on the chemistry, mechanism of action, metabolism, adverse effects, Structure Activity Relationships (SAR), therapeutic uses and synthesis of important drugs. | <ol style="list-style-type: none">1. Understand the importance of drug design and different techniques of drug design.2. Understand the chemistry of drugs with respect to their biological activity.3. Know the metabolism, adverse effects and therapeutic value of drugs.4. Know the importance of SAR of drugs. |
| BP602T: Pharmacology-III | This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and in addition, emphasis on the principles of toxicology and chronopharmacology. | <ol style="list-style-type: none">1. Understand the mechanism of drug action and its relevance in the treatment of different infectious diseases2. Comprehend the principles of toxicology and treatment of various poisonings and3. Appreciate correlation of pharmacology with related medical sciences. |
| BP603T: Herbal Drug Technology | This subject gives the student the knowledge of basic understanding of herbal drug industry, the quality of raw material, guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceutical etc. The subject also emphasizes on Good Manufacturing Practices (GMP), patenting and regulatory issues of herbal drugs. | <ol style="list-style-type: none">1. Understand raw material as source of herbal drugs from cultivation to herbal drug product.2. Know the WHO and ICH guidelines for evaluation of herbal drugs.3. Know the herbal cosmetics, natural sweeteners and nutraceuticals.4. Appreciate patenting of herbal drugs, GMP. |
| BP604T: Biopharmaceutics and Pharmacokinetics | This subject is designed to impart knowledge and skills of Biopharmaceutics and pharmacokinetics and their applications in pharmaceutical development, design of dose and dosage regimen and in solving the problems raised therein. | <ol style="list-style-type: none">1. Understand the basic concepts in biopharmaceutics and pharmacokinetics and their significance.2. Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination.3. To understand the concepts of bioavailability and bioequivalence of drug products and their significance. |
| BP605T: Pharmaceutical Biotechnology | Biotechnology has a long promise to revolutionize the biological sciences and technology. Scientific application of biotechnology in the field of genetic engineering, medicine and fermentation technology makes the subject interesting. Biotechnology is leading to new biological revolutions in diagnosis, prevention and cure of diseases, new and cheaper pharmaceutical drugs. | <ol style="list-style-type: none">1. Understanding the importance of Immobilized enzymes in Pharmaceutical Industries.2. Genetic engineering applications in relation to production of pharmaceuticals.3. Importance of Monoclonal antibodies in Industries.4. Appreciate the use of microorganisms in fermentation technology. |
| BP606T: Pharmaceutical Quality Assurance | This course deals with the various aspects of quality control and quality assurance aspects of pharmaceutical industries. It deals with the important aspects like cGMP, QC tests, documentation, quality certifications and regulatory affairs. | <ol style="list-style-type: none">1. Understand the cGMP aspects in a pharmaceutical industry.2. Appreciate the importance of documentation.3. Understand the scope of quality certifications applicable to pharmaceutical industries.4. Understand the responsibilities of QA & QC departments. |



Crescent School of Pharmacy

IV B. Pharm. VII Semester

| Code & Course | Scope | Objectives |
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| BP701T: Instrumental Methods of Analysis | This subject deals with the application of instrumental methods in qualitative and quantitative analysis of drugs. This subject is designed to impart a fundamental knowledge on the principles and instrumentation of spectroscopic and chromatographic technique. This also emphasizes on theoretical and practical knowledge on modern analytical instruments that are used for drug testing. | <ol style="list-style-type: none">1. Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis.2. Understand the chromatographic separation and analysis of drugs.3. Perform quantitative & qualitative analysis of drugs using various analytical instruments. |
| BP 702 T: Industrial Pharmacy-II | This course is designed to impart fundamental knowledge on pharmaceutical product development and translation from laboratory to market. | <ol style="list-style-type: none">1. Know the process of pilot plant and scale up of pharmaceutical dosage forms.2. Understand the process of technology transfer from lab scale to commercial batch.3. Know different Laws and Acts that regulate pharmaceutical industry.4. Understand the approval process and regulatory requirements for drug products. |
| BP 703T: Pharmacy Practice | In the changing scenario of pharmacy practice in India, for successful practice of Hospital Pharmacy, the students are required to learn various skills like drug distribution, drug information, and therapeutic drug monitoring for improved patient care. In community pharmacy, students will be learning various skills such as dispensing of drugs, responding to minor ailments by providing suitable safe medication, patient counseling for improved patient care in the community set up. | <ol style="list-style-type: none">1. Know various drug distribution methods in a hospital.2. Appreciate the pharmacy stores management and inventory control.3. Monitor drug therapy of patient through medication chart review and clinical review.4. Obtain medication history interview and counsel the patients.5. Identify drug related problems.6. Detect and assess adverse drug reactions.7. Interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states.8. Know pharmaceutical care services.9. Do patient counseling in community pharmacy.10. Appreciate the concept of rational drug therapy. |
| BP 704T: Novel Drug Delivery Systems | This subject is designed to impart basic knowledge on the area of novel drug delivery systems. | <ol style="list-style-type: none">1. To understand various approaches for development of novel drug delivery systems.2. To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation. |