



Gautam College of Pharmacy, Hamirpur

(Approved by PCI - New Delhi & Himachal Government)



01972-292018, 221493



ggchmr@gmail.com

Affiliated to Himachal Pradesh Technical University, Hamirpur & Himachal Pradesh Technical Education Board, Dharamshala
Address: - Ward No. 10 Hamirpur (Himachal Pradesh)

Program Outcomes (POs)

Program Outcomes are broad statements that describe the professional achievements and attributes that the program aims to instill in students by the time they complete the program. These outcomes cover a range of inter-related knowledge, skills, and personality traits that students should acquire throughout their education. The POs ensure that graduates are well-prepared to meet the demands of their profession.

Course Outcomes (COs)

Course Outcomes are specific statements that define the essential and enduring disciplinary knowledge and abilities that students should acquire from the first semester onward. These outcomes specify the expected depth of learning for each semester and are clearly communicated through both theoretical and practical knowledge. COs help in setting clear learning goals and expectations for each course, ensuring that students progressively build their expertise.

Communication and Awareness

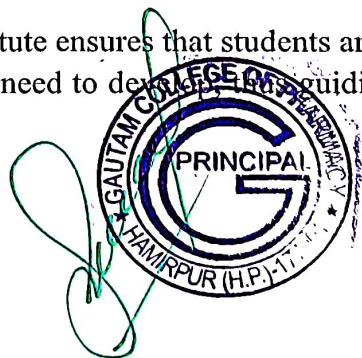
Institute Website: The Program Outcomes and Course Outcomes for all programs offered by the institute are clearly stated and displayed on the institute's website.

Faculty and Staff: These outcomes are communicated to teachers and students by faculty members, class teachers, and mentors. They emphasize the importance of understanding and achieving these outcomes.

Orientation Programs: During student orientation programs, the Heads of Departments (HoDs) highlight the POs and COs to create awareness.

Admission Process: Students are informed about the expected outcomes of their programs during the admission process and orientation. This includes providing them with detailed syllabi, course outcomes, and the assessment strategy for each course.

By effectively communicating POs and COs, the institute ensures that students are well-informed about the goals of their education and the skills they need to develop, thus guiding them toward successful professional careers.





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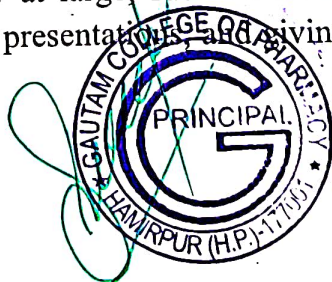


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The following outcomes reflect the terminal skills that all B. Pharmacy graduates should be able to demonstrate upon program completion:

1. **Pharmacy Knowledge:** Apply the knowledge of pharmaceutical sciences, including basic and applied aspects of chemistry, biology, and medicine, to solve complex pharmacy-related problems.
2. **Problem Analysis:** Identify, formulate, and analyze pharmacy problems to reach substantiated conclusions using first principles of pharmaceutical sciences and other related sciences.
3. **Design/Development of Solutions:** Design and develop pharmaceutical products and processes that meet specified needs, considering public health, safety, and environmental factors.
4. **Conduct Investigations of Complex Problems:** Utilize research-based knowledge and research methods, including the design of experiments, analysis and interpretation of data, and synthesis of information, to draw valid conclusions in pharmaceutical research.
5. **Modern Tool Usage:** Select and apply appropriate techniques, resources, and modern pharmacy and IT tools, including prediction and modeling, to complex pharmaceutical activities, with an understanding of their limitations.
6. **The Pharmacist and Society:** Apply knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to professional pharmacy practice.
7. **Environment and Sustainability:** Understand the impact of pharmaceutical solutions on societal and environmental contexts and demonstrate knowledge of, and need for, sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics, responsibilities, and norms of pharmacy practice.
9. **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings within the pharmaceutical field.
10. **Communication:** Communicate effectively on complex pharmaceutical activities with the pharmacy community and with society at large, such as writing effective reports, designing documentation, making effective presentations, and giving and receiving clear instructions.





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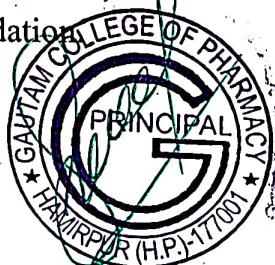


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11. **Pharmacy Management and Finance:** Demonstrate knowledge and understanding of pharmaceutical and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long Learning:** Recognize the need for, and have the ability to engage in independent and life-long learning in the broad context of pharmaceutical and technological change.

These Program Outcomes ensure that pharmacy graduates are well-prepared to contribute effectively to healthcare, pharmaceutical industries, and society at large, equipped with the necessary skills, knowledge, and ethical foundation.





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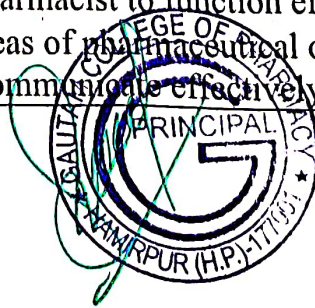
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Sem./Year	Subject Name	Subject Code	Course Outcome
1 Sem./1Year	HUMAN ANATOMY AND PHYSIOLOGY-I	BP101T	Objectives: Upon completion of this course the student should be able to <ul style="list-style-type: none">• Explain the gross morphology, structure and functions of various organs of the human body.• Describe the various homeostatic mechanisms and their imbalances.• Identify the various tissues and organs of different systems of human body.• Perform the various experiments related to special senses and nervous system.• Appreciate coordinated working pattern of different organs of each system
1 Sem./1Year	PHARMACEUTICAL ANALYSIS	BP102T	Objectives: Upon completion of the course student shall be able to <ul style="list-style-type: none">• understand the principles of volumetric and electro chemical analysis• carryout various volumetric and electrochemical titrations• develop analytical skills
1 Sem./1Year	PHARMACEUTICAL CS- I	BP103T	Objectives: Upon completion of this course the student should be able to: <ul style="list-style-type: none">• Know the history of profession of pharmacy• Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations• Understand the professional way of handling the prescription• Preparation of various conventional dosage forms
1 Sem./1Year	PHARMACEUTICAL INORGANIC CHEMISTRY	BP104T	Objectives: Upon completion of course student shall be able to <ul style="list-style-type: none">• know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals• understand the medicinal and pharmaceutical importance of inorganic compounds
1 Sem./1Year	COMMUNICATION SKILLS	BP105T	Objectives: Upon completion of the course the student shall be able to <ul style="list-style-type: none">• Understand the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation.• Communicate effectively (Verbal and Non





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			<p>Verbal). Effectively manage the team as a team player</p> <ul style="list-style-type: none"> • Develop interview skills • Develop Leadership qualities and essentials
1 Sem./ 1Year	<ul style="list-style-type: none"> • REMEDIAL BIOLOGY • REMEDIAL MATHEMATICS 	BP106T	<p>Objectives: Upon completion of the course, the student shall be able to</p> <ul style="list-style-type: none"> • know the classification and salient features of five kingdoms of life • understand the basic components of anatomy & physiology of plant • know understand the basic components of anatomy & physiology animal with • special reference to human. <p>Objectives: Upon completion of the course the student shall be able to:-</p> <ul style="list-style-type: none"> • Know the theory and their application in Pharmacy • Solve the different types of problems by applying theory • Appreciate the important application of mathematics in Pharmacy
2 nd Sem./1 Year	HUMAN ANATOMY AND PHYSIOLOGY-II	BP 201T.	<p>Objectives: Upon completion of this course the student should be able to:</p> <ul style="list-style-type: none"> • Explain the gross morphology, structure and functions of various organs of the human body. • Describe the various homeostatic mechanisms and their imbalances. • Identify the various tissues and organs of different systems of human body. • Perform the hematological tests like blood cell counts, haemoglobin estimation, • bleeding/clotting time etc and also record blood pressure, heart rate, pulse and respiratory volume. • Appreciate coordinated working pattern of different organs of each system • Appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.
2 nd Sem./1 Year	PHARMACEUTICAL ORGANIC CHEMISTRY -I	BP202T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> • write the structure, name and the type of





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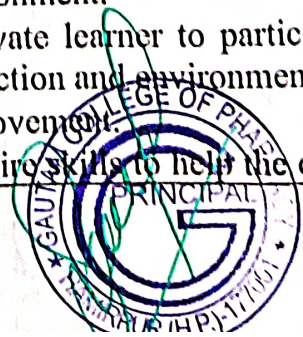
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			<p>isomerism of the organic compound</p> <ul style="list-style-type: none"> • write the reaction, name the reaction and orientation of reactions • account for reactivity/stability of compounds, • identify/confirm the identification of organic compound
2 nd Sem./1 Year	BIOCHEMISTRY	BP203T	<p>Objectives: Upon completion of course student shall be able to</p> <ul style="list-style-type: none"> • Understand the catalytic role of enzymes, importance of enzyme inhibitors in • design of new drugs, therapeutic and diagnostic applications of enzymes. • Understand the metabolism of nutrient molecules in physiological and • pathological conditions. • Understand the genetic organization of mammalian genome and functions of • DNA in the synthesis of RNAs and proteins.
2 nd Sem./1 Year	PATHOPHYSIOLOGY	BP204T	<p>Objectives: Upon completion of the subject student shall be able to –</p> <ul style="list-style-type: none"> • Describe the etiology and pathogenesis of the selected disease states; • Name the signs and symptoms of the diseases; and • Mention the complications of the diseases.
2 nd Sem./1 Year	COMPUTER APPLICATIONS IN PHARMACY	BP205T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> • know the various types of application of computers in pharmacy • know the various types of databases • know the various applications of databases in pharmacy
2 nd Sem./1 Year	ENVIRONMENTAL SCIENCES	BP206T	<p>Objectives: Upon completion of the course the student shall be able to:</p> <ul style="list-style-type: none"> • Create the awareness about environmental problems among learners. • Impart basic knowledge about the environment and its allied problems. • Develop an attitude of concern for the environment. • Motivate learner to participate in environment protection and environment • improvement. • Acquire skills to help the concerned individuals





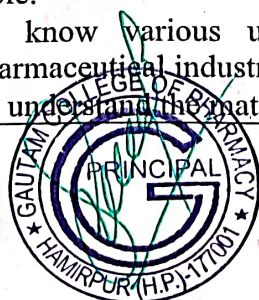
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			<p>in identifying and solving</p> <ul style="list-style-type: none"> environmental problems. Strive to attain harmony with Nature.
3 rd Sem./ 2Year	PHARMACEUTICAL ORGANIC CHEMISTRY –II	BP301T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> write the structure, name and the type of isomerism of the organic compound write the reaction, name the reaction and orientation of reactions account for reactivity/stability of compounds, prepare organic compounds
3 rd Sem./ 2Year	PHYSICAL PHARMACEUTICALS-I	BP302T	<p>Objectives: Upon the completion of the course student shall be able to</p> <ul style="list-style-type: none"> Understand various physicochemical properties of drug molecules in the designing the dosage forms Know the principles of chemical kinetics & to use them for stability testing nad determination of expiry date of formulations Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.
3 rd Sem./ 2Year	PHARMACEUTICAL MICROBIOLOGY	BP303T	<p>Objectives: Upon completion of the subject student shall be able to;</p> <ul style="list-style-type: none"> Understand methods of identification, cultivation and preservation of various microorganisms To understand the importance and implementation of sterilization in pharmaceutical processing and industry Learn sterility testing of pharmaceutical products. Carried out microbiological standardization of Pharmaceuticals. Understand the cell culture technology and its applications in pharmaceutical industries.
3 rd Sem./ 2Year	PHARMACEUTICAL ENGINEERING	BP304T	<p>Objectives: Upon completion of the course student shall be able:</p> <ul style="list-style-type: none"> To know various unit operations used in Pharmaceutical industries. To understand the material handling techniques.





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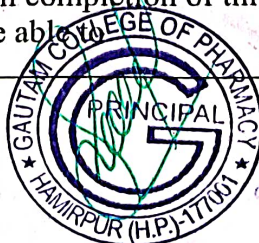
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			<ul style="list-style-type: none"> To perform various processes involved in pharmaceutical manufacturing process. To carry out various test to prevent environmental pollution. To appreciate and comprehend significance of plant lay out design for optimum use of resources. To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries.
4 th Sem./ 2Year	PHARMACEUTICAL ORGANIC CHEMISTRY – III	BP401T	<p>Objectives: At the end of the course, the student shall be able to</p> <ul style="list-style-type: none"> understand the methods of preparation and properties of organic compounds explain the stereo chemical aspects of organic compounds and stereo chemical reactions know the medicinal uses and other applications of organic compounds
4 th Sem./ 2Year	MEDICINAL CHEMISTRY – I	BP402T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> understand the chemistry of drugs with respect to their pharmacological activity understand the drug metabolic pathways, adverse effect and therapeutic value of drugs know the Structural Activity Relationship (SAR) of different class of drugs write the chemical synthesis of some drugs
4 th Sem./ 2Year	PHYSICAL PHARMACEUTICALS-II	BP 403T	<p>Objectives: Upon the completion of the course student shall be able to</p> <ul style="list-style-type: none"> Understand various physicochemical properties of drug molecules in the designing the dosage forms Know the principles of chemical kinetics & to use them for stability testing nad determination of expiry date of formulations Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.
4 th Sem./ 2Year	PHARMACOLOGICAL	BP 404T	<p>Objectives: Upon completion of this course the student should be able to</p>





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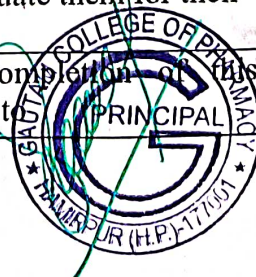
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			<ul style="list-style-type: none"> • Understand the pharmacological actions of different categories of drugs • Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels. • Apply the basic pharmacological knowledge in the prevention and treatment of various diseases. • Observe the effect of drugs on animals by simulated experiments • Appreciate correlation of pharmacology with other bio medical sciences
4 th Sem./ 2Year	PHARMACOGNOSY AND PHYTOCHEMISTRY I	BP 405T	<p>Objectives: Upon completion of the course, the student shall be able</p> <ul style="list-style-type: none"> • to know the techniques in the cultivation and production of crude drugs • to know the crude drugs, their uses and chemical nature • know the evaluation techniques for the herbal drugs • to carry out the microscopic and morphological evaluation of crude drugs
5 th Sem./ 3Year	MEDICINAL CHEMISTRY	BP501T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> • Understand the chemistry of drugs with respect to their pharmacological activity • Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs • Know the Structural Activity Relationship of different class of drugs • Study the chemical synthesis of selected drugs
5 th Sem./ 3Year	Industrial Pharmacy-I	BP502T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> • Know the various pharmaceutical dosage forms and their manufacturing techniques. • Know various considerations in development of pharmaceutical dosage forms • Formulate solid, liquid and semisolid dosage forms and evaluate them for their Quality
5 th Sem./	PHARMACOLOGY-II	BP503T	<p>Objectives: Upon completion of this course the student should be able to</p>





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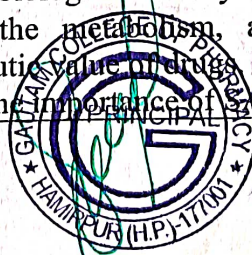
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3Year			<ul style="list-style-type: none"> Understand the mechanism of drug action and its relevance in the treatment of different diseases Demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments Demonstrate the various receptor actions using isolated tissue preparation Appreciate correlation of pharmacology with related medical sciences
5 th Sem./ 3Year	PHARMACOGNOSY AND PHYTOCHEMISTRY II	BP504T	<p>Objectives: Upon completion of the course, the student shall be able.</p> <ul style="list-style-type: none"> to know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents to understand the preparation and development of herbal formulation. to understand the herbal drug interactions to carryout isolation and identification of phytoconstituents
5 th Sem./ 3Year	PHARMACEUTICAL JURISPRUDENCE	BP505T	<p>Objectives: Upon completion of the course, the student shall be able to understand:</p> <ul style="list-style-type: none"> The Pharmaceutical legislations and their implications in the development and Marketing of pharmaceuticals. Various Indian pharmaceutical Acts and Laws The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals The code of ethics during the pharmaceutical practice
6 th Sem./ 3Year	MEDICINAL CHEMISTRY – III	BP601T	<p>Objectives: Upon completion of the course student shall be able to</p> <ul style="list-style-type: none"> Understand the importance of drug design and different techniques of drug design. Understand the chemistry of drugs with respect to their biological activity. Know the metabolism, adverse effects and therapeutic value of drugs Know the importance of R of drugs.





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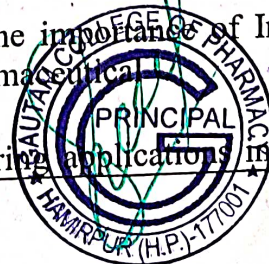
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6 th Sem./ 3Year	PHARMACOLOGY-III	BP602T	<p>Objectives: Upon completion of this course the student should be able to:</p> <ul style="list-style-type: none"> • understand the mechanism of drug action and its relevance in the treatment of • different infectious diseases • comprehend the principles of toxicology and treatment of various poisonings and • appreciate correlation of pharmacology with related medical sciences.
6 th Sem./ 3Year	HERBAL DRUG TECHNOLOGY	BP603T	<p>Objectives: Upon completion of this course the student should be able to:</p> <ul style="list-style-type: none"> • understand raw material as source of herbal drugs from cultivation to herbal drug • product • know the WHO and ICH guidelines for evaluation of herbal drugs • know the herbal cosmetics, natural sweeteners, nutraceuticals • appreciate patenting of herbal drugs, GMP .
6 th Sem./ 3Year	BIOPHARMACEUTICS AND PHARMACOKINETICS	BP604T	<p>Objectives: Upon completion of the course student shall be able to:</p> <ul style="list-style-type: none"> • Understand the basic concepts in biopharmaceutics and pharmacokinetics and their significance. • Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination. • To understand the concepts of bioavailability and bioequivalence of drug products and their significance. • Understand various pharmacokinetic parameters, their significance & applications.
6 th Sem./ 3Year	PHARMACEUTICAL BIOTECHNOLOGY	BP605T	<p>Objectives: Upon completion of the subject student shall be able to;</p> <ul style="list-style-type: none"> • Understanding the importance of Immobilized enzymes in Pharmaceutical Industries • Genetic engineering applications in relation to





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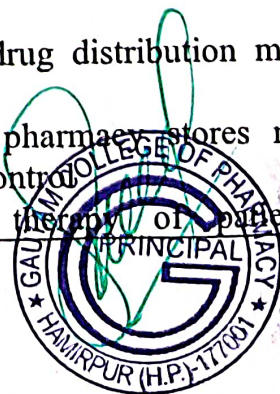
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			<p>production of pharmaceuticals</p> <ul style="list-style-type: none">• Importance of Monoclonal antibodies in Industries• Appreciate the use of microorganisms in fermentation technology
6 th Sem./ 3Year	PHARMACEUTICAL QUALITY ASSURANCE	BP606T	<p>Objectives: Upon completion of the course student shall be able to:</p> <ul style="list-style-type: none">• understand the cGMP aspects in a pharmaceutical industry• appreciate the importance of documentation• understand the scope of quality certifications applicable to pharmaceutical industries• understand the responsibilities of QA & QC departments
7 th Sem./ 4Year	INSTRUMENTAL METHODS OF ANALYSIS	BP701T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none">• Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis• Understand the chromatographic separation and analysis of drugs.• Perform quantitative & qualitative analysis of drugs using various analytical instruments.
7 th Sem./ 4Year	INDUSTRIAL PHARMACY-II	BP702T	<p>Objectives: Upon completion of the course, the student shall be able to:</p> <ul style="list-style-type: none">• Know the process of pilot plant and scale up of pharmaceutical dosage forms• Understand the process of technology transfer from lab scale to commercial batch• Know different Laws and Acts that regulate pharmaceutical industry• Understand the approval process and regulatory requirements for drug products
7 th Sem./ 4Year	PHARMACY PRACTICE	BP703T	<p>Objectives: Upon completion of the course, the student shall be able to</p> <ul style="list-style-type: none">• know various drug distribution methods in a hospital• appreciate the pharmacy stores management and inventory control• monitor drug therapy of patient through





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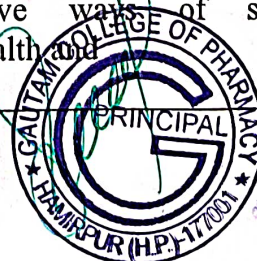
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			<ul style="list-style-type: none"> medication chart review and clinical review obtain medication history interview and counsel the patients identify drug related problems detect and assess adverse drug reactions interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states know pharmaceutical care services do patient counseling in community pharmacy; appreciate the concept of Rational drug therapy.
7 th Sem./ 4Year	NOVEL DRUG DELIVERY SYSTEMS	BP704T	<p>Objectives: Upon completion of the course student shall be able</p> <ul style="list-style-type: none"> To understand various approaches for development of novel drug delivery systems. To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation
8 th Sem./ 4Year	BIOSTATISTICS AND RESEARCH METHODOLOGY	BP801T	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> Know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment) Know the various statistical techniques to solve statistical problems Appreciate statistical techniques in solving the problems.
8 th Sem./ 4Year	SOCIAL AND PREVENTIVE PHARMACY	BP802T	<p>Objectives: After the successful completion of this course, the student shall be able to:</p> <ul style="list-style-type: none"> Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide. Have a critical way of thinking based on current healthcare development. □ Evaluate alternative ways of solving problems related to health and pharmaceutical issues





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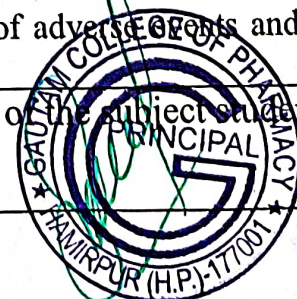
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8 th Sem./ 4Year	PHARMA MARKETING MANAGEMENT	BP803T	Course Objective: <ul style="list-style-type: none"> The course aims to provide an understanding of marketing concepts and techniques and their applications in the pharmaceutical industry.
8 th Sem./ 4Year	PHARMACEUTI CAL REGULATORY SCIENCE	BP804E T	Objectives: Upon completion of the subject student shall be able to; <ul style="list-style-type: none"> Know about the process of drug discovery and development Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals Know the regulatory approval process and their registration in Indian and international markets
8 th Sem./ 4Year	PHARMACOVIGI LANCE	BP805T	Objectives: <ul style="list-style-type: none"> At completion of this paper it is expected that students will be able to (know, do, and appreciate): Why drug safety monitoring is important? History and development of pharmacovigilance National and international scenario of pharmacovigilance Dictionaries, coding and terminologies used in pharmacovigilance Detection of new adverse drug reactions and their assessment International standards for classification of diseases and drugs Adverse drug reaction reporting systems and communication in pharmacovigilance Methods to generate safety data during pre clinical, clinical and post approval phases of drugs' life cycle Drug safety evaluation in paediatrics, geriatrics, pregnancy and lactation Pharmacovigilance Program of India (PvPI) requirement for ADR reporting in India ICH guidelines for ICSR, PSUR, expedited reporting, pharmacovigilance planning CIOMS requirements for ADR reporting Writing case narratives of adverse events and their quality.
8 th Sem./ 4Year	QUALITY CONTROL AND	BP 806 ET	Objectives: Upon completion of the subject student shall be able to;





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	STANDARDIZATION OF HERBALS		<ul style="list-style-type: none"> • know WHO guidelines for quality control of herbal drugs • know Quality assurance in herbal drug industry • know the regulatory approval process and their registration in Indian and international markets • appreciate EU and ICH guidelines for quality control of herbal drugs
8 th Sem./ 4Year	COMPUTER AIDED DRUG DESIGN	BP 807 ET.	<p>Objectives: Upon completion of the course, the student shall be able to understand</p> <ul style="list-style-type: none"> • Design and discovery of lead molecules • The role of drug design in drug discovery process • The concept of QSAR and docking • Various strategies to develop new drug like molecules. • The design of new drug molecules using molecular modeling software
8 th Sem./ 4Year	CELL AND MOLECULAR BIOLOGY	BP808 ET	<p>Objectives: Upon completion of the subject student shall be able to;</p> <ul style="list-style-type: none"> • Summarize cell and molecular biology history. • Summarize cellular functioning and composition. • Describe the chemical foundations of cell biology. • Summarize the DNA properties of cell biology. • Describe protein structure and function. • Describe cellular membrane structure and function. • Describe basic molecular genetic mechanisms. • Summarize the Cell Cycle
8 th Sem./ 4Year	COSMETIC SCIENCE	BP809 ET	
8 th Sem./ 4Year	PHARMACOLOGICAL SCREENING METHODS	BP810 ET.	<p>Objectives Upon completion of the course the student shall be able to,</p> <ul style="list-style-type: none"> • Appreciate the applications of various commonly used laboratory animals. • Appreciate and demonstrate the various screening methods used in preclinical research • Appreciate and demonstrate the importance of





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			<p>biostatistics and research methodology</p> <ul style="list-style-type: none"> • Design and execute a research hypothesis independently
8 th Sem./ 4Year	ADVANCED INSTRUMENTA TION TECHNIQUES	BP 811 ET	<p>Objectives: Upon completion of the course the student shall be able to</p> <ul style="list-style-type: none"> • understand the advanced instruments used and its applications in drug analysis • understand the chromatographic separation and analysis of drugs. • understand the calibration of various analytical instruments • know analysis of drugs using various analytical instruments.
8 th Sem./ 4Year	DIETARY SUPPLEMENTS AND NUTRACEUTIC ALS	BP 812 ET	<p>Objective: This module aims to provide an understanding of the concepts behind the theoretical applications of dietary supplements. By the end of the course, students should be able to :</p> <ul style="list-style-type: none"> • Understand the need of supplements by the different group of people to maintain healthy life. • Understand the outcome of deficiencies in dietary supplements. • Appreciate the components in dietary supplements and the application. • Appreciate the regulatory and commercial aspects of dietary supplements including health claims.





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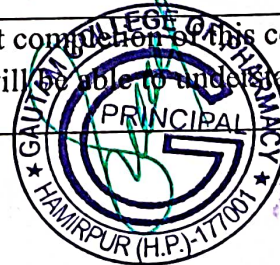
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Sem./Year	Subject Name	Subject Code	Course Outcome
1 Sem./1Year	MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES	MPC 101T	Objectives: After completion of course student is able to know about chemicals and excipients <ul style="list-style-type: none">The analysis of various drug single and combination dosage forms.Theoretical and practical skills of the instruments.
1 Sem./1Year	ADVANCED ORGANIC CHEMISTRY - I	MPC 102T	Objectives: Upon completion of course, the student shall be to understand <ul style="list-style-type: none">The principles and applications of retero synthesis.The mechanism & applications of various named reactions.The concept of disconnection to develop synthetic routes for small target molecule.The various catalysts used in organic reactions.The chemistry of heterocyclic compounds.
1 Sem./1Year	ADVANCED MEDICINAL CHEMISTRY	MPC 103T	Objectives: At completion of this course it is expected that students will be able to understand <ul style="list-style-type: none">Different stages of drug discovery.Role of medicinal chemistry in drug research.Different techniques for drug discovery.Various strategies to design and develop new drug like molecules for biological targets.Peptidomimetics
1 Sem./1Year	CHEMISTRY OF NATURAL	MPC 104T	Objectives: At completion of this course it is expected that students will be able to understand





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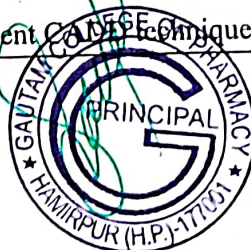
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	PRODUCTS		<ul style="list-style-type: none"> Different types of natural compounds and their chemistry and medicinal importance. The importance of natural compounds as lead molecules for new drug discovery. The concept of rDNA technology tool for new drug discovery. General methods of structural elucidation of compounds of natural origin. Isolation, purification and characterization of simple chemical constituents from natural source
2 nd Sem./1Year	ADVANCED SPECTRAL ANALYSIS	MPC 201T	<p>Objectives: At completion of this course it is expected that students will be able to understand</p> <ul style="list-style-type: none"> Interpretation of the NMR, Mass and IR spectra of various organic compounds. Theoretical and practical skills of the hyphenated instruments Identification of organic compounds.
2 nd Sem./1Year	ADVANCED ORGANIC CHEMISTRY - II	MPC 202T	<p>Objectives: Upon completion of course, the student shall able to understand</p> <ul style="list-style-type: none"> The principles and applications of Green chemistry. The concept of peptide chemistry. The various catalysts used in organic reactions. The concept of stereochemistry and asymmetric synthesis.
2 nd Sem./1Year	COMPUTER AIDED DRUG DESIGN (MPC 203T)	MPC 203T	<p>Objectives: At completion of this course it is expected that students will be able to understand</p> <p>Role of CADD in drug discovery.</p> <ul style="list-style-type: none"> Different CADD techniques and their





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			<p>applications various strategies to design and develop new drug like molecules.</p> <ul style="list-style-type: none">• Working with molecular modeling softwares to design new drug molecules.• The in silico virtual screening protocols.
2 nd Sem./1Year	PHARMACEUTICAL PROCESS CHEMISTRY	MPC 204T	<p>Objectives: At completion of this course it is expected that students will be able to understand</p> <ul style="list-style-type: none">• The strategies of scale up process of APIs and intermediates.• The various unit operations and various reactions in process chemistry.

