Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution.

Upload COs for all courses (exemplars from Glossary-Notes)	Department	Upload a description of Mechanism of Communication
Programme Outcomes – B. Pharm 1. **Pharmaceutical Knowledge:-** Students gain a deep knowledge regarding human body, its related diseases, analytical skills, drug molecules (Active Pharmaceutical Ingredients) along with excipients, natural drug resources, chemistry involved in API including synthesis of commonly used drugs, effect of drug on human body, toxicity and impurity profile, ADME studies of drugs (behaviour of drug in human body), dosage form studies including novel approaches, designing and development of formulation stability studies, analysis etc. 2. **Research Analysis:** Students could apply the knowledge in research field to make new discoveries. 3. **Design & Development of dosage forms:** Various dosage forms could be prepared by the a pharmacy students in the pharmaceutical companies for the ease of patients. 4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. 5. **Modern methods usage:** Create, select, and apply appropriate techniques, resources, and	Pharmaceutical Sciences	• University website. • Curriculum books (Academic calendar). • Notice boards. • Lesson plans. • Brochure. • Student awareness workshops. • Student orientation programmes.

modern methods with an understanding of the limitations and its usage. The student also learns to handle many instruments related to their studies which would help them work in a Pharmaceutical Industry, pharmacovigilance, regulatory requirements, legal processes etc. 6. **Pharmacy and society:** Pharmacist provides complete health care data and practices to the people of the society and guides them to be healthy. The student also learns drug distribution system, patient counselling, industrial laws etc. Student gains expertise in storage and distribution of drugs with all precautions and in-depth knowledge of dose, adverse effect and other health related issues to deal with indoor and outdoor patients admitted in hospitals and also in public. 7. **Environment and sustainability:** Understand the impact of the professional pharmacist in society and environment and make an impact of it on the people of the society. 8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the pharmacy practice. Student is also trained in ethical behaviour with physician, nurses and other paramedical staff for protecting patient's health. 9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams acts as a multidisciplinary person in every context.Communicate effectively on pharmaceutical activities with the community		

and with society. 10. **Life-long learning:** Recognize the need forand have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. 11. **Social Interaction:** Being a public welfare job a pharmacist would be able to interact with the people in a better way to cure them and make them feel healthy.		
<u>Program Specific Outcomes – B. Pharm</u> **1.** Able to apply the knowledge gained during the course of the program from pharmacology, pharmaceutics, medicinal chemistry, Pharmacognosy, APHE, communication skills, pharmaceutical analysis, Biotechnology, biochemistry, cosmetology and environmental studies. **2.** Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team. **3.** Able to do multidisciplinary jobs in the pharmaceutical industries in various branches and would be able to write effective project reports in multidisciplinary environment in the context of changing technologies. **4.** Able to communicate easily and comfortably. Would be able to perform multitasks in multi fields including pharmaceutical & cosmetics. Research area would be strong.	Pharmaceutical Sciences	• University website. • Curriculum books (Academic calendar). • Notice boards. • Lesson plans. • Brochure. • Student awareness workshops. • Student orientation programmes.

Course outcomes - B. Pharm **B. Pharm. 1st and 2nd Semester**		
Human anatomy & Physiology 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. Practical's allow the verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings. This is helpful for developing an insight on the subject.	Pharmaceutical Sciences	• University website. • Curriculum books (Academic calendar). • Notice boards. • Lesson plans. • Brochure. • Student awareness workshops. • Student orientation programmes.
Mathematics & Biostatics This is an introductory course in mathematics. This subject deal with the introduction to Partial fraction, Logarithm, matrices and Determinant, Analytical geometry, Calculus, differential equation and Laplace transform. The students were able to use the knowledge obtained, in further fields of pharmacy like pharmaceutical engineering.	Pharmaceutical Sciences	
Pharm. Engineering-I The knowledge of basic unit operations and their importance in day to day running of a pharmaceutical unit is emphasized to the students. This knowledge is further improved in the ensuing pharm. Engineering and pharmaceutics subjects.	Pharmaceutical Sciences	
Computer Application The knowledge of hardware and software components along with hands on knowledge on	Pharmaceutical Sciences	

programming tools comes handy in operation of a pharmacy and also serves as a stepping stone for the computaional chemistry covered in higher semesters.		
Pharmacognosy-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.	Pharmaceutical Sciences	
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.	Pharmaceutical Sciences	
Pharm. Inorganic Chemistry-I This subject deals with the monographs of inorganic drugs and pharmaceuticals. The students were well acquainted with the principle of limit tests, different classes of inorganic pharmaceuticals and their analysis.	Pharmaceutical Sciences	
Pharm. Organic Chemistry-II: 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.	Pharmaceutical Sciences	
B. Pharm 3rd and 4th Semester		
Dispensing Pharmacy : Learn about different types of pharmaceutical formulations and preparation and dispensing of them.	Pharmaceutical Sciences	• University website. • Curriculum books (Academic
Pharm. Analysis-I:	Pharmaceutical	

This course deals with the fundamentals of analytical chemistry and principles of electrochemical analysis of drugs including their principles, titrations and analytical skills. The students become well versed in sampling, analysis of data, ready to perform different types of titrimetric and gravimetric analysis .	Sciences	calendar). • Notice boards. • Lesson plans. • Brochure. • Student awareness workshops. • Student orientation programmes.
Medicinal Chemistry-I: 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.	Pharmaceutical Sciences	
Pharmaceutical Microbiology: The knowledge in this subject is a perquisite for both biotechnology and medicinal chemistry. It also helps them in project planning.	Pharmaceutical Sciences	
Pharmacognosy-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.	Pharmaceutical Sciences	
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	Pharmaceutical Sciences	

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.		
Physical Chemistry: The students were able to use the knowledge obtained on various states of gases, liquids; colloids, thermodynamics etc in the ensuing fields like pharmaceutical engineering, physical pharmacy and medicinal chemistry.	Pharmaceutical Sciences	
Pathophysiology Toxicology, & Health Education: The knowledge of pathophysiology helps the students to understand the etiology and pathogenesis of the selected disease states and also about the signs and symptoms of the diseases. Identify the complications of the diseases. Know most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements.	Pharmaceutical Sciences	
B. Pharm 5th and 6th Semester		
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	Pharmaceutical Sciences	• University website. • Curriculum books (Academic calendar). • Notice boards.

bioassay.		• Lesson plans. • Brochure. • Student awareness workshops. • Student orientation programmes.
Applied Biochemistry: The students learn about the chemistry and biological importance of biological macromolecules. And in the practical paper they get hands on knowledge on qualitative and quantitative estimation of these. This knowledge is helpful for them in learning about pharmacology, medicinal chemistry and pharmacology.	Pharmaceutical Sciences	
Pharmacognosy-III: The biosynthesis of different plant secondary metabolites are introduced to the students. This helps them in identifying biomolecules as pharmacophores and correlate this knowledge with medicinal chemistry and pharmacology.	Pharmaceutical Sciences	
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.	Pharmaceutical Sciences	
Hospital and Clinical Pharmacy: This course deals majorly with the different professional aspects of pharmacy. It helps the students to develop a keen inquisitive mind that is needed by a practising pharmacist.	Pharmaceutical Sciences	
Pharm. Analysis-Physical: The students learn about different types of	Pharmaceutical Sciences	

fundamental instrumental methods of analysis along with complexometric and non-aqueous titration that helps them in project planning and also in subjects like medicinal chemistry, pharmaceutics etc.		
Drug Regulatory Affairs: This course is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India. This builds up their fundamental knowledge on the ethics associated with the profession of pharmacy.	Pharmaceutical Sciences	
Industrial Pharmacy & Cosmetology: 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. It gives students proper skills for understanding, introduction, application and evaluation of modern techniques and methods for the use in the professional and research fields of cosmetology, ability to search for and classify new information.	Pharmaceutical Sciences	
B. Pharm 7th and 8th Semester		
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	Pharmaceutical Sciences	• University website. • Curriculum books (Academic calendar). • Notice boards.

(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.		• Lesson plans. • Brochure. • Student awareness workshops. • Student orientation programmes.
Pharm. Analysis-III: The instrumental methods of analysis that are required in pharmaceutical research are covered in this course. The practical applications of these instruments are also illustrated to the students.	Pharmaceutical Sciences	
Pharmacognosy-IV: The use of modern analytical techniques for screening and analysing secondary plant metabolites is elaborated to the students thereby helping them to plan their further research plan while pursuing higher studies.	Pharmaceutical Sciences	
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.	Pharmaceutical Sciences	
Biopharmaceutics and Pharmacokinetics: This subject enables the students to visualize the effect of pharmacokinetic (ADMET) parameters on the biological effect of the drug. The correlation of pharmacokinetics and pharmacodynamics is thus introduced and is experimentally explained to them	Pharmaceutical Sciences	

Pharma. Technology: The dosage form design is introduced to the students. This enables them to work in the pharma Formulation and Development.	Pharmaceutical Sciences	
Industrial Training: Identify the role of Pharmacy professional in Pharma industry. Explain the theoretical aspects directly viewing production and other activity live in industry and can decide his/her career. Develop the practical knowledge while working in industry to apply theoretical principle of Manufacturing. Demonstrate the planning and implementation of skill in Pharma industry	Pharmaceutical Sciences	