Shri Balaji Shikshan Prasarak Mandal's
B.PHARMACY COLLEGE
Modi Learning Center, Ring Road, AMBAJOGAI Dist Beed-431517. (M.S.)
PH (0): 02446-244018, (0): 02446-248753, Fax: 02446-245684
Affiliated to Dr. B.A.M.U. Aurangabad
Approved by P.C.I. New Delhi, D.T.E. Mumbai and Govt. of Maharashtra
website: www.mlcpharmacy.edu.in/copambajogai E-mail:sbspmprincipal@gmail.com

2.6.1-Programme Outcomes (POs) , Programme specific Outcomes (PSOs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website

Index

Sr No	Name of Particular
1	Programme Outcomes and Programme specific Outcomes (PSOs)
2	Course Outcomes
3	Sample copy of Course outcomes prepared by Subject teacher
4	Screenshot of the college website displaying the PO and CO for information to students
5	Sample copy of Journal with printed program outcomes
6	Sample copy of Question paper drafted and mapped with Course outcomes and Programme outcomes

Shri Balaji Shikshan Prasarak Mandal's

B. PHARMACY COLLEGE

Modi learning Centre, Ring Road, Ambajogai, Beed.

PROGRAM OUTCOMES (PO'S)

The college has adopted eleven Program Outcomes (PO's) defined for the B. Pharm Programme. At successfully completing the B. Pharm program, student should have achieved the eleven program outcomes mentioned below.

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, analyze, 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 team-building 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 well-being.
PO6	Professional Identity	Understand, analyze 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	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.
PO9	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.
PO10	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.
PO11	Life-long learning	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

Principal
B.Pharmacy College,

Shri Balaji Shikshan Prasarak Mandal's

B.PHARMACY COLLEGE

Modi Learning Center, Ring Road, AMBAJOGAI Dist Beed-431517. (M.S.)
PH (0): 02446-244018, (0): 02446-248753, Fax: 02446-245684
Affiliated to Dr. B.A.M.U. Aurangabad
Approved by P.C.I. New Delhi, D.T.E. Mumbai and Govt. of Maharashtra
website: www.mlcpharmacy.edu.in/copambajogai E-mail:sbspmprincipal@gmail.com

BSPM/AMB/OFFICE/ Date: / /

PROGRAM OUTCOMES (POs) (M.Pharm)

The college has adopted five program outcomes (PO's) defined for the M.Pharm program. At successfully completing the M.Pharm program, student should have achieved the five programs outcomes mentioned below.

1. Apply knowledge of pharmaceutics to develop innovative and effective drug delivery systems.
2. Demonstrate proficiency in designing and optimizing pharmaceutical formulations for improved drug efficacy and patient compliance.
3. Evaluate the stability, compatibility, and bioavailability of drugs in different dosage forms.
4. Demonstrate ethical and professional behavior in pharmaceutical research, development, and manufacturing.
5. Communicate effectively with healthcare professionals, regulatory authorities, and other stakeholders regarding pharmaceutical products and processes.

Principal
B.Pharmacy College,
Ambajogai.

Programme Specific Outcomes :B.Pharm

- Adequate knowledge, necessary skills to practice the profession of pharmacy and participation in the implementation of National Health Programmes.
- Adequate knowledge of synthesis and analysis of medicinal agents, their mode and mechanism of action, drug interactions, patient counselling and adequate technical information to be exchanged with the physician and other health professionals.
- Depth knowledge of formulation, quality assurance and storage of variouspharmaceutical dosage forms including herbal medicines.
- Understood the concept of community pharmacy and ability to participate in health care programmes of Government and private sector.
- Expert to detail the physicians and market the medicinal agents for diagnosis, prevention and therapeutic purposes. The graduate pharmacist act as bridge between the Physician and Patients for achieving better health of community.
- Well informed socially responsible global citizen with sharp critical thinking skillshaving sound awareness about drug laws and human rights.
- Contribution to society as broadly educated, expressive, ethical and responsible citizens with proven expertise
- Ability to design a system and process to meet desired needs within realistic constraints such as health, safety, security and manufacturability

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist.Beed

Programme specific outcomes: M. Pharm

- Adequate knowledge and scientific information regarding basic principles of Pharmaceutical & Medicinal Chemistry, Pharmaceutics including Cosmetology, Pharmacology, Pharmacognosy including herbal medicines, Quality control and assurance.
- Knowledge of practical aspects of synthesis of APIs & its intermediates and analysis of various pharmaceutical dosage forms
- Formulation developments & quality assurance of various pharmaceutical dosage forms including those of herbal origin as per standards of official books, WHO and other regulatory agencies.
- Pharmacological screening and biological standardization and in-vivo drug interactions, Product detailing, marketing, distribution and selling of pharmaceutical products.
- Develop the following attitudes during and after the course.
    - Willing to apply the current knowledge of Pharmacy in the best interest of the patients and the community.
    - Maintain high standards of professional ethics in discharging professional obligations.
    - Continuouslyupgradeprofessionalinformationandbeconversantwithlatest advances in the field of pharmacy to serve communitybetter.
- Ability to function professionally with ethical response ability as an individual as well as in multidisciplinary teams with positive attitude
- Successfully demonstrate technical competency by applying knowledge in industry, government, academia, research, entrepreneurial pursuit and consulting firms
- Participate in continuing education programmes of PCI/AICTE/ BAMU to upgrade the knowledge and professional skills.
- Ability to identify, critically analyze, formulate and solve analytical and pharmaceutical problems.

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist.Beed

COURSE: PHARMACEUTICAL ANALYSIS - I THEORY
(BP102T)

CO No.	CO Statement	Bloom's Level
BP102T.1	Define preliminaries in pharmaceutical analysis and explain quality, purity,qualitative-quantitative analysis, errors, standards, accuracy, precision, impurities.	Remember, Understand
BP102T.2	Explain the theoretical principle of classical method of titrimetric (volumetric)analysis in general including physical methods of end point detection and preparation and standardization of various normal and molar standard solution.	Understand, Apply, Analyze, Evaluate
BP102T.3	Explain the theoretical principle involved in aqueous acid-base titrations, non-aqueous titrations, redox titration, complexometric titrations, argentometric titrations, diazotisation titration and gravimetric analysis.	Understand, Apply, Analyze, Evaluate
BP102T.4	Describe the principle, instrumentation, working and applications of electrochemical methods of analysis like conductometry, potentiometry andpolarography.	Understand, Apply, Analyze
BP102T.5	Explain the principle and outline the reactions involved in pharmacopoeialassay of aspirin, sodium benzoate, ephedrine HCl, sodium chloride, magnesium sulphate, calcium gluconate and barium sulphate.	Bl4 Analyze, Bl5 Evaluate

COURSE: PHARMACEUTICAL ANALYSIS - I PRACTICAL
(BP108P)

CO No.	CO Statement	Bloom's Level
BP108P.1	Analyze qualitatively impurities in pharmaceuticals by performing limit tests.	Understand, Apply, Analyze, Evaluate
BP108P.2	Quantitatively analyze the pharmaceutical compounds by performing Pharmacopoeial assay and standardize the analytical solutions using principles of volumetric analysis.	Understand, Apply, Analyze, Evaluate
BP108P.3	Determine strength of analytical solutions by conductometry and potentiometry.	Understand, Apply, Analyze, Evaluate

Sub.Incharge
Mr. Kawar A. A.

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICS - I THEORY (BP103T)

CO No.	CO Statement	Bloom's Level
BP103T.1	Know the history of profession of pharmacy.	Remember, Understand
BP103T.2	Explain the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations.	Remember, Understand
BP103T.3	Explain different monophasic and biphasic dosage forms.	Remember, Understand
BP103T.4	Explain the professional way of handling the prescription.	Remember, Understand
BP103T.5	Prepare various conventional dosage forms.	Remember, Understand

COURSE: PHARMACEUTICS - I PRACTICAL (BP109P)

CO No.	CO Statement	Bloom's Level
BP109P.1	To prepare and evaluate formulations of syrups, elixirs, solutions and linctus.	Remember, Understand, Apply
BP109P.2	To prepare and evaluate formulations of suspensions, powders and granules and emulsions.	Remember, Understand, Apply
BP109P.3	To prepare and evaluate formulations of suppositories, semisolids gargles and mouthwashes.	Remember, Understand, Apply

Sub.Incharge

Principal
B.Pharmacy College,
Ambajogai.

COURSE: HUMAN ANATOMY AND PHYSIOLOGY - II
THEORY (BP201T)

CO No.	CO Statement	Bloom's Level
BP201T.1	Demonstrate competency in identifying the major structures and function of the gross anatomy of the central nervous system and plexuses	Remember, Understand
BP201T.2	Recognize and describe the anatomical structures, the physiological functions of digestive system &explain the principles of energetics, mechanism with role of ATP, creatinine phosphate & BMR	Remember, Understand, Apply
BP201T.3	Analyze and describe the structures and functions of human anatomy and physiology from a regional perspective for the respiratory systems and urinary systems	Remember, Understand, Apply
BP201T.4	From a regional viewpoint, demonstrate competency in identifying the major glands of human body, their origins, and hormones with functions	Remember, Understand, Apply
BP201T.5	Discuss in depth the anatomy, physiology of respiratory system. use the knowledge of genetics to predict the structure & mechanism of chromosomes, genes & DNA and analyze the process of protein synthesis & genetic pattern of inheritance.	Remember, Understand, Apply

COURSE: HUMAN ANATOMY AND PHYSIOLOGY - II
PRACTICAL (BP207P)

CO No.	CO Statement	Bloom's Level
BP207P.1	Develop the knowledge of anatomical structures and physiological functions of organs for the nervous, integumentary, digestive, respiratory, CVS, urinary and reproductive systems by studying models, charts, specimens & permanent slides.	Remember, Understand, Apply
BP207P.2	Demonstrate the general neurological examinations, positive-negative feedback mechanism, functions of olfactory nerves, and analyze the functions of special senses. Demonstrate the working of cell analyzer for total blood count.	Remember, Understand, Apply
BP207P.3	Understand the use of recording the body temperature, BMI, TIDAL volume and vital capacity, visual acuity, reflex activity, types of taste and of family planning devices to facilitate improvement in health and well-being.	Remember, Understand, Apply

Sub.Incharge

Principal
B.Pharmacy College
Ambajogai.

COURSE: PHARMACEUTICALMICROBIOLOGY – THEORY (BP302T)

CO No.	CO Statement	Bloom's Level
BP303T.1	Identify and control the communicable diseases, sewage and sewage disposal, food spoilage and prevention of foods from microbes.	Remember, Understand, Apply
BP303T.2	Develop a comprehensive understanding of the relevance and critical application of pharmaceutical microbiology to the pharmaceutical industry with respect to the presence and control of microbes in raw materials, products and production environments by kind.	Remember, Understand, Apply, Analyze
BP303T.3	Define and classify the historical development and scope of microbiology.	Remember, Understand, Apply
BP303T.4	Employ the knowledge to control the microbe by physical and chemical methods.	Remember, Understand, Apply, Analyze, Evaluate
BP303T.5	Describe the microbes as sources of pharmaceutical use.	Remember, Understand, Apply, Create

COURSE: PHARMACEUTICAL MICROBIOLOGY – PRACTICAL (BP307P)

CO No.	CO Statement	Bloom's Level
BP307P.1	Demonstrate proficiency and use of the following in the laboratory: streak plate isolation technique; bacterial staining techniques; wet mount etc.	Remember, Apply, Analyze
BP307P.2	Proper culture & instrument handling.	Remember, Understand, Apply, Evaluate
BP307P.3	Perform the control of microbial contamination methods as well as interpret the result for effect of chemicals on microbes.	Remember, Understand, Apply, Analyze, Evaluate

Sub.Incharge
Sakthee VG.

Principal
S.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL JURISPRUDENCE- THEORY
(BP505T)

CO No.	CO Statement	Bloom's Level
BP505T.1	Describe the various schedules and their applications in pharmacy, role of pharmacy council of India	Remember, Understand, Apply
BP505T.2	Explain the significance and relevance of pharmaceutical laws in India and role of ethics in pharmacy profession.	Remember, Apply
BP505T.3	Explain how drug and cosmetics act 1940 was executed & legal requirement related to import and export.	Remember, Understand, Apply
BP505T.4	Analyze requirements of manufacturing, labelling and packaging of formulation, fixing the prize of bulk drugs & its advertisements.	Remember, Understand, Apply
BP505T.5	To consolidate and amend the law related to narcotic drugs for the control and regulation of operations related to narcotic drugs and psychotropic substances.	Remember, Understand, Analyze

Sub.Incharge

Yogesh.

Kambale Jogesh.

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal

B.Pharmacy College, Ambajogai.

COURSE: PHARMACEUTICAL QUALITY ASSURANCE-THEORY (BP606T)

CO No.	CO Statement	Bloom's Level
BP606T.1	Importance of quality, quality management, total quality management and quality by design in pharmaceutical industry for development of quality product.	Remember, Understand, Apply
BP606T.2	Importance of organization and personnel for development of good pharmaceutical product.	Remember, Understand, Apply, Analyze
BP606T.3	Explain requirements of good manufacturing practices and good laboratory practices and explain various guidelines for GMP AND GLP.	Remember, Understand, Apply, Analyze, Evaluate
BP606T.4	Give importance of documentation in pharmaceutical industry and details about preparation and utilization of documentation.	Remember, Understand, Apply, Analyze
BP606T.5	Describe the meaning of calibration its importance in pharmaceutical industries and explain in detail validation process for manufacturing, formulation and analysis of formulation with validation protocol.	Remember, Understand, Apply

Sub.Incharge

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College.
Ambajogai.

COURSE: NOVEL DRUG DELIVERY SYSTEM (BP704T)

CO No.	CO Statement	Bloom's Level
BP704T.1	To study advantages, disadvantages, approaches to design controlled release formulations based on diffusion, dissolution and ion exchange principles. Properties of drugs relevant to controlled release formulations. Detail study of polymer.	Remember, Understand, Apply
BP704T.2	To study definition, advantages, disadvantages, concept of microspheres, microparticles, buccal, implantable DDS. Applications and methods of microencapsulation, principles of bioadhesion.	Remember, Understand, Apply
BP704T.3	To study the permeation through skin, factors affecting permeation, permeation enhancers, basic components and formulation approaches of TDDS and GRDDS. Formulation of inhalers nasal sprays, nebulizers.	Remember, Understand, Create
BP704T.4	Explain the concepts targeted drug delivery, liposomes, niosomes, nanoparticles, monoclonal antibodies and their applications.	Remember, Understand
BP704T.5	To study, intra ocular barriers and methods to overcome –preliminary study, ocular formulations and ocuserts, intra uterine devices (IUDS) and applications.	Remember, Understand, Apply

Manisha.
Sub.Incharge

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

Course Name : MODERN PHARMACEUTICS (MP 103 Theory)

C103.1	To recall the concepts of preformulation and relate them to formulation development.
C103.2	To illustrate the parameters of optimization and its applications in formulation
C103.3	To develop validation and calibration master plan as per regulatory guidelines.
C103.4	To categorize the policies of GMP, layout of buildings, equipment and management of production.
C103.5	To explain the principles of tablet compression and compaction.
C103.6	To compile the consolidation parameters to determine the stability of a dosage form.

Sub.Incharge
G.C.Chavan

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE OUTCOMES (AS PER PCI SYLLABUS)
COURSE: HUMAN ANATOMY AND PHYSIOLOGY - I THEORY (BP101T)

CO No.	CO Statement	Bloom's Level
BP101T.1	Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.	Remember, Understand, Apply, Analyze
BP101T.2	Recognize the anatomical structures and explain the physiological functions of cell, tissues, blood, heart, lymphatic system, special senses, ANS	Remember, Understand, Apply, Analyze
BP101T.3	Draw anatomical structures and explain the physiological functions of skin, bones, muscles, joints.	Remember, Understand, Apply, Analyze
BP101T.4	explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.	Remember, Understand, Apply, Analyze
BP101T.5	Use anatomical knowledge to predict physiological consequences, and use knowledge of function to predict the features of anatomical structures.	Remember, Understand, Apply, Analyze

COURSE: PHARMACEUTICAL ANALYSIS - I THEORY (BP102T)

CO No.	CO Statement	Bloom's Level
BP102T.1	Define preliminaries in pharmaceutical analysis and explain quality, purity, qualitative-quantitative analysis, errors, standards, accuracy, precision, impurities.	Remember, Understand
BP102T.2	Explain the theoretical principle of classical method of titrimetric (volumetric) analysis in general including physical methods of end point detection and preparation and standardization of various normal and molar standard solution.	Understand, Apply, Analyze, Evaluate
BP102T.3	Explain the theoretical principle involved in aqueous acid-base titrations, non-aqueous titrations, redox titration, complexometric titrations, argentometric titrations, diazotisation titration and gravimetric analysis.	Understand, Apply, Analyze, Evaluate
BP102T.4	Describe the principle, instrumentation, working and applications of electrochemical methods of analysis like conductometry, potentiometry and polarography.	Understand, Apply, Analyze
BP102T.5	Explain the principle and outline the reactions involved in pharmacopoeial assay of aspirin, sodium benzoate, ephedrine HCl, sodium chloride, magnesium sulphate, calcium gluconate and barium sulphate.	Bl4 Analyze, Bl5 Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE OUTCOMES (AS PER PCI SYLLABUS)
COURSE: HUMAN ANATOMY AND PHYSIOLOGY - I THEORY (BP101T)

CO No.	CO Statement	Bloom's Level
BP101T.1	Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.	Remember, Understand, Apply, Analyze
BP101T.2	Recognize the anatomical structures and explain the physiological functions of cell, tissues, blood, heart, lymphatic system, special senses, ANS	Remember, Understand, Apply, Analyze
BP101T.3	Draw anatomical structures and explain the physiological functions of skin, bones, muscles, joints.	Remember, Understand, Apply, Analyze
BP101T.4	explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.	Remember, Understand, Apply, Analyze
BP101T.5	Use anatomical knowledge to predict physiological consequences, and use knowledge of function to predict the features of anatomical structures.	Remember, Understand, Apply, Analyze

COURSE: PHARMACEUTICAL ANALYSIS - I THEORY (BP102T)

CO No.	CO Statement	Bloom's Level
BP102T.1	Define preliminaries in pharmaceutical analysis and explain quality, purity, qualitative-quantitative analysis, errors, standards, accuracy, precision, impurities.	Remember, Understand
BP102T.2	Explain the theoretical principle of classical method of titrimetric (volumetric) analysis in general including physical methods of end point detection and preparation and standardization of various normal and molar standard solution.	Understand, Apply, Analyze, Evaluate
BP102T.3	Explain the theoretical principle involved in aqueous acid-base titrations, non-aqueous titrations, redox titration, complexometric titrations, argentometric titrations, diazotisation titration and gravimetric analysis.	Understand, Apply, Analyze, Evaluate
BP102T.4	Describe the principle, instrumentation, working and applications of electrochemical methods of analysis like conductometry, potentiometry and polarography.	Understand, Apply, Analyze
BP102T.5	Explain the principle and outline the reactions involved in pharmacopoeial assay of aspirin, sodium benzoate, ephedrine HCl, sodium chloride, magnesium sulphate, calcium gluconate and barium sulphate.	Bl4 Analyze, Bl5 Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICS - I THEORY (BP103T)

CO No.	CO Statement	Bloom's Level
BP103T.1	Know the history of profession of pharmacy.	Remember, Understand
BP103T.2	Explain the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations.	Remember, Understand
BP103T.3	Explain different monophasic and biphasic dosage forms.	Remember, Understand
BP103T.4	Explain the professional way of handling the prescription.	Remember, Understand
BP103T.5	Prepare various conventional dosage forms.	Remember, Understand

COURSE: PHARMACEUTICAL INORGANIC CHEMISTRY THEORY (BP104T)

CO No.	CO Statement	Bloom's Level
BP104T.1	Recognize different classes of inorganic pharmaceuticals; understand the medicinal and pharmaceutical importance of same.	Remember, Understand
BP104T.2	Describe the major intra-extracellular electrolytes, physiological acid-base balance including concepts of acids, bases, buffers, isotonic solutions and apply knowledge of the same for the preparation of buffered isotonic solutions	Remember, Understand
BP104T.3	Enlist the sources of impurities in pharmaceutical products and describe the limit tests	Remember, Understand, Apply
BP104T.4	Classify and describe various inorganic pharmaceuticals like dental products, gastrointestinal agents, antimicrobials, antidotes, expectorants, emetics, haematinics and astringents.	Remember, Understand, Apply, Analyze
BP104T.5	Describe therapeutic and diagnostic role of radiopharmaceuticals including safety parameters to be followed while handling them	Remember, Understand, Apply, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai

Principal
B.Pharmacy College,
Ambajogai.

COURSE: HUMAN ANATOMY AND PHYSIOLOGY - I PRACTICAL (BP107P)

CO No.	CO Statement	Bloom's Level
BP107P.1	Examine anatomical structures microscopically and evaluate physiological functions of different organ and systems.	Apply, Analyze, Evaluate, Create
BP107P.2	Interpret the values of blood practically and analyze for normal level of blood using different methods of hemocytometry.	Apply, Analyze, Evaluate, Create
BP107P.3	Analyze the function of heart by evaluating heart rate and blood pressure.	Apply, Analyze, Evaluate, Create

COURSE: PHARMACEUTICAL ANALYSIS - I PRACTICAL (BP108P)

CO No.	CO Statement	Bloom's Level
BP108P.1	Analyze qualitatively impurities in pharmaceuticals by performing limit tests.	Understand, Apply, Analyze, Evaluate
BP108P.2	Quantitatively analyze the pharmaceutical compounds by performing Pharmacopoeial assay and standardize the analytical solutions using principles of volumetric analysis.	Understand, Apply, Analyze, Evaluate
BP108P.3	Determine strength of analytical solutions by conductometry and potentiometry.	Understand, Apply, Analyze, Evaluate

COURSE: PHARMACEUTICS - I PRACTICAL (BP109P)

CO No.	CO Statement	Bloom's Level
BP109P.1	To prepare and evaluate formulations of syrups, elixirs, solutions and linctus.	Remember, Understand, Apply
BP109P.2	To prepare and evaluate formulations of suspensions, powders and granules and emulsions.	Remember, Understand, Apply
BP109P.3	To prepare and evaluate formulations of suppositories, semisolids gargles and mouthwashes.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL INORGANIC CHEMISTRY PRACTICAL (BP110P)

CO No.	CO Statement	Bloom's Level
BP110P.1	Analyze the sample by performing limit tests and to carry out identification tests for inorganic cations and anions.	Understand, Apply, Analyze, Evaluate
BP110P.2	Synthesize inorganic compounds, calculate theoretical yield, follow safety measures, and monitor reaction; determine purity of sample by test for purity.	Apply, Analyze, Evaluate, Create
BP110P.3	Document the result, write journal, answer oral and written questions.	Analyze, Create

COURSE: HUMAN ANATOMY AND PHYSIOLOGY - II THEORY (BP201T)

CO No.	CO Statement	Bloom's Level
BP201T.1	Demonstrate competency in identifying the major structures and function of the gross anatomy of the central nervous system and plexuses	Remember, Understand
BP201T.2	Recognize and describe the anatomical structures, the physiological functions of digestive system &explain the principles of energetics, mechanism with role of ATP, creatinine phosphate & BMR	Remember, Understand, Apply
BP201T.3	Analyze and describe the structures and functions of human anatomy and physiology from a regional perspective for the respiratory systems and urinary systems	Remember, Understand, Apply
BP201T.4	From a regional viewpoint, demonstrate competency in identifying the major glands of human body, their origins, and hormones with functions	Remember, Understand, Apply
BP201T.5	Discuss in depth the anatomy, physiology of respiratory system. use the knowledge of genetics to predict the structure & mechanism of chromosomes, genes & DNA and analyze the process of protein synthesis & genetic pattern of inheritance.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL ORGANIC CHEMISTRY - I THEORY (BP202T)

CO No.	CO Statement	Bloom's Level
BP202T.1	Identify class of organic compound and name them as per IUPAC nomenclature.	Understand
BP202T.2	Classify, draw structure of and identify isomerism of organic compounds.	Remember, Understand
BP202T.3	Describe the physical properties, reaction, reaction mechanism, orientation, reactivity, stability and chemical tests of alkane, alkenes, conjugated dienes, alkyl halide, alcohols, aldehyde, ketones, carboxylic acid and aliphatic amines.	Understand, Apply
BP202T.4	Describe preparation methods of alkane, alkenes, conjugated dienes, alkyl halide, alcohols, aldehyde, ketones, carboxylic acid and aliphatic amines.	Understand, Apply
BP202T.5	Review the applications of alkane, alkenes, conjugated dienes, alkyl halide, alcohols, aldehyde, ketones, carboxylic acid and aliphatic amines.	Remember, Understand

COURSE: BIOCHEMISTRY – THEORY (BP203T)

CO No.	CO Statement	Bloom's Level
BP203T.1	Classify, discuss chemical nature and role of bio-molecules like carbohydrates, lipids, nucleic acids, amino acids, enzymes, isoenzymes, coenzymes, proteins as well as state and describe concepts of bioenergetics, energy rich compounds.	Remember, Understand, Apply, Create
BP203T.2	Discuss enzyme kinetics, inhibition and regulation, along with importance of co-enzymes; outline therapeutic and diagnostic applications of enzymes, isoenzymes.	Remember, Understand, Apply, Analyze, Create
BP203T.3	Describe carbohydrate metabolism, anabolic and catabolic pathways, related disorders, hormonal regulation of glucose, as well as review processes of biological oxidation.	Remember, Understand, Apply, Analyze
BP203T.4	Review lipid metabolism, synthesis and oxidation of fatty acids, significance of cholesterol, related disorders as well as summarize amino acid metabolism and related disorders.	Remember, Understand, Apply, Analyze
BP203T.5	Illustrate nucleic acid synthesis and metabolism; describe the process of transcription, translation, genetic information transfer.	Remember, Understand, Apply, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PATHOPHYSIOLOGY - THEORY (BP204T)

CO No.	CO Statement	Bloom's Level
BP204T.1	Gain in-depth knowledge of human pathological processes and their effects on homeostasis. Emphasize interrelationship among organ systems in deviations from homeostasis.	Remember, Understand, Apply, Analyze
BP204T.2	Understand fundamental concepts and processes of human pathophysiology such as alterations in cellular function, infection; mechanism of inflammation and diseases of the immune systems.	Remember, Understand, Apply, Analyze
BP204T.3	Analyze factors that contribute to the occurrence of various diseases of cardiovascular, respiratory, renal, endocrine, nervous, gastrointestinal and skeletal system etc. Recognize the signs and symptoms of diseases that may be found in a health record.	Remember, Understand, Apply, Analyze
BP204T.4	Describe broadly the different stages of infection due to infectious disease and host response; outline agent biology, pathogenesis, pathology of the disease and the manner in.	Remember, Understand, Apply, Analyze
BP204T.5	Apply contextual knowledge of pathophysiology to maintain health and to prevent the occurrence and spread of diseases in living matter making related awareness in the society.	Remember, Understand, Apply, Analyze

COURSE: HUMAN ANATOMY AND PHYSIOLOGY - II PRACTICAL (BP207P)

CO No.	CO Statement	Bloom's Level
BP207P.1	Develop the knowledge of anatomical structures and physiological functions of organs for the nervous, integumentary, digestive, respiratory, CVS, urinary and reproductive systems by studying models, charts, specimens & permanent slides.	Remember, Understand, Apply
BP207P.2	Demonstrate the general neurological examinations, positive-negative feedback mechanism, functions of olfactory nerves, and analyze the functions of special senses. Demonstrate the working of cell analyzer for total blood count.	Remember, Understand, Apply
BP207P.3	Understand the use of recording the body temperature, BMI, TIDAL volume and vital capacity, visual acuity, reflex activity, types of taste and of family planning devices to facilitate improvement in health and well-being.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL ORGANIC CHEMISTRY - I PRACTICAL (BP208P)

CO No.	CO Statement	Bloom's Level
BP208P.1	Analyze and identify qualitatively the alcohols, aldehyde ketones, carboxylic acid, phenols, hydrocarbons, esters, anilides and amines.	Apply, Analyze, Evaluate
BP208P.2	Relate the chemical structure and chemical properties of drug molecule and construct the molecular models of organic compounds.	Understand, Evaluate, Create
BP208P.3	Synthesize suitable derivatives of organic compound and identify the organic compound.	Analyze, Evaluate, Create

COURSE: BIOCHEMISTRY - PRACTICAL (BP209P)

CO No.	CO Statement	Bloom's Level
BP209P.1	Identify, quantify carbohydrate, protein, creatinine, cholesterol form a given sample.	Apply, Analyze, Evaluate
BP209P.2	Identify abnormal constituents of urine, estimate blood sugar level and study salivary amylase activity.	Apply, Analyze, Evaluate
BP209P.3	Answer oral questions; write assignments and answers.	Apply, Analyze, Evaluate, Create

COURSE : COMMUNICATION SKILLS –THEORY (BP105T)

CO No.	CO Statement	Bloom's Level
BP105T.1	List and identify verbs and the passive voice	Apply, Analyze, Remember, Understand
BP105T.2	Apply the skills learnt to confidently stand in a group discussion.	Apply, Analyze, Evaluate
BP105T.3	Exercise the skills learnt to communicate effectively technically/businesswise	Apply, Analyze, Evaluate, Create
BP105T.4	Appreciate and imbibe the importance of ethics, human values, honesty and integrity	Remember, Understand

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE : COMMUNICATION SKILLS -PRACTICAL (BP111P)

CO No.	CO Statement	Bloom's Level
BP111P.1	Practice the Basic Communication attributes required during meeting people, making friends,asking questions using Wordsworth® English language lab software.	Apply, Analyze, , Evaluate, Create
BP111P.2	Learn the Advanced techniques involved in effective communication, writing skills, interview handling skills, presentation skills, E-mail writing using Wordsworth® English language lab software.	Apply, Analyze, Evaluate
BP111P.3	Plan, execute and conclude the tasks using various methodologies (defined protocol or qualitative or quantitative techniques).	Apply, Analyze, Evaluate, Create

COURSE : COMPUTER APPLICATIONS IN PHARMACY– THEORY (BP205T)

CO No.	CO Statement	Bloom's Level
BP205T.1	Recognise the number systems and information systems and software	Apply, Analyze, Remember,Understand
BP205T.2	Understand the application of computers in pharmacy and preclinical development	Apply, Analyze, Evaluate
BP205T.3	Discuss the concept of Bioinformatics and its application	Apply, Analyze, Evaluate, Create

COURSE : COMPUTER APPLICATIONS IN PHARMACY-- PRACTICAL (BP210P)

CO No.	CO Statement	Bloom's Level
BP210P.1	Describe the components of a PC	Apply, Analyze, Remember,Understand
BP210P.2	Compare the different operating systems	Apply, Analyze, Evaluate
BP210P.3	Record simple programs using BASIC and C programming languages	Apply, Analyze, Evaluate, Create
BP210P.4	Apply knowledge gained for use of computers in the pharmacy	Apply, Analyze, Remember,Understand

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai

COURSE : ENVIRONMENTAL SCIENCES – THEORY(BP206T)

CO No.	CO Statement	Bloom's Level
BP206T.1	Create awareness about environmental problems among learners	Apply, Analyze, Remember,Understand
BP206T.2	Impart basic knowledge about the environment and its allied products.	Apply, Analyze, Evaluate
BP206T.3	Motivate learners to participate in environment protection and environment improvement	Apply, Analyze, Evaluate, Create
BP206T.4	Acquire skills to help the concerned individuals in identifying and solving environmental problems.	Apply, Analyze, Remember,Understand

COURSE: PHARMACEUTICAL ORGANIC CHEMISTRY II – THEORY (BP301T)

CO No.	CO Statement	Bloom's Level
BP301T.1	Draw the structure, explain aromatic nature and the physicochemical properties of organic compounds and factors affecting on it.	Remember,Understand, Apply, Analyze
BP301T.2	Draw and explain reaction for preparation of different organic compounds with suitable example.	Remember, Understand
BP301T.3	Draw chemical reactions of organic compounds and explain the mechanism of reaction.	Remember, Understand, Apply
BP301T.4	Describe applications of organic compounds of biological and therapeutic importance.	Remember, Understand, Apply
BP301T.5	Explain chemistry of cyclic, polycyclic compounds, fats and oils.	Remember,Understand, Apply, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHYSICAL PHARMACEUTICS I – THEORY (BP302T)

CO No.	CO Statement	Bloom's Level
BP302T.1	State and understand concept, properties and mechanisms of solubility, states of matter, surface tension and interfacial phenomenon, complexation and protein binding, buffers and isotonicity.	Remember, Understand
BP302T.2	Understand and demonstrate various physicochemical properties of drug molecules in the designing and evaluation of the dosage forms.	Understand
BP302T.3	Explain, classify and compare adsorption, surfactants, complexation, buffered isotonic solutions.	Evaluate, Create
BP302T.4	Apply the principles of solubility, physicochemical properties, adsorption, complexation and protein binding, buffers in pharmaceutical and biological system.	Apply, Evaluate
BP302T.5	Analyze and evaluate composition of substances, solubility, stability constants and adsorption constants for formulation development.	Analyze

COURSE: PHARMACEUTICALMICROBIOLOGY – THEORY (BP302T)

CO No.	CO Statement	Bloom's Level
BP303T.1	Identify and control the communicable diseases, sewage and sewage disposal, food spoilage and prevention of foods from microbes.	Remember, Understand, Apply
BP303T.2	Develop a comprehensive understanding of the relevance and critical application of pharmaceutical microbiology to the pharmaceutical industry with respect to the presence and control of microbes in raw materials, products and production environments by kind.	Remember, Understand, Apply, Analyze
BP303T.3	Define and classify the historical development and scope of microbiology.	Remember, Understand, Apply
BP303T.4	Employ the knowledge to control the microbe by physical and chemical methods.	Remember, Understand, Apply, Analyze, Evaluate
BP303T.5	Describe the microbes as sources of pharmaceutical use.	Remember, Understand, Apply, Create

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL ENGINEERING THEORY (BP304T)

CO No.	CO Statement	Bloom's Level
BP304T.1	Comprehend and understand the basic concepts of flow of fluids and explain mechanism of size reduction and size separation.	Remember, Understand
BP304T.2	Analyze the mechanisms and equipment used for heat transfer, evaporation and distillation.	Remember, Understand
BP304T.3	Exemplify concepts and methods of drying and mixing, understand types of dryers and mixers used in pharmaceutical industries.	Remember, Understand
BP304T.4	Utilization of knowledge of construction, working, uses, of filtration, centrifugation and crystallization.	Remember, Understand
BP304T.5	Understand the materials of pharmaceutical plant construction and various preventive methods used for corrosion control in pharmaceutical industries.	Remember, Understand

COURSE: PHARMACEUTICAL ORGANIC CHEMISTRY II – PRACTICAL (BP305P)

CO No.	CO Statement	Bloom's Level
BP305P.1	Describe principle, reaction, mechanism and role of chemicals involved in experiment.	Remember, Understand, Apply
BP305P.2	Synthesize organic compounds and apply the knowledge of physical and chemical properties of the compound for its purification.	Remember, Understand, Apply, Analyze
BP305P.3	Communicate the knowledge, analyze the fats and oils and describe the significance of various analytical constants of oil.	Remember, Understand, Apply

COURSE: PHYSICAL PHARMACEUTICS I – PRACTICAL (BP306P)

CO No.	CO Statement	Bloom's Level
BP306P.1	Perform and illustrate different methods of determination of surface tension, cmc of surfactants, partition coefficient, critical solution temperature, hlb number, pka value, stability constant and adsorption constant.	Remember, Understand
BP306P.2	Select and apply appropriate data to develop new formulation for society.	Apply, Evaluate
BP306P.3	Perform and interpret effective results of experiment with concept behind the experiment.	Apply, Analyze, Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL MICROBIOLOGY – PRACTICAL (BP307P)

CO No.	CO Statement	Bloom's Level
BP307P.1	Demonstrate proficiency and use of the following in the laboratory: streak plate isolation technique; bacterial staining techniques; wet mount etc.	Remember, Apply, Analyze
BP307P.2	Proper culture & instrument handling.	Remember, Understand, Apply, Evaluate
BP307P.3	Perform the control of microbial contamination methods as well as interpret the result for effect of chemicals on microbes.	Remember, Understand, Apply, Analyze, Evaluate

COURSE: PHARMACEUTICAL ENGINEERING –PRACTICAL (BP 308P)

CO No.	CO Statement	Bloom's Level
BP308P.1	Exemplify the basic concepts of heat transfer, steam distillation and evaporation.	Remember, Understand
BP308P.2	Analyze the mechanisms drying rate, mixing index and size reduction.	Remember, Understand, Apply
BP308P.3	Understand the mechanisms of humidification, filtration and crystallization.	Remember, Understand, Apply

COURSE: PHARMACEUTICAL ORGANIC CHEMISTRY III THEORY (BP401T)

CO No.	CO Statement	Bloom's Level
BP401T.1	Define and explain the different types of isomers, assign suitable configuration, draw the structure of specific isomer and explain the determination of configuration.	Remember, Understand, Analyze
BP401T.2	Explain chiral, achiral, meso compound with suitable examples and describe conformational analysis of different organic molecules.	Remember, Understand, Apply, Analyze
BP401T.3	Explain stereoselective, stereospecific reactions, chiral synthesis, resolution of racemic mixture and racemic modification.	Remember, Understand, Apply
BP401T.4	Classify heterocycles, draw the structures, give nomenclature, assign numbering, and explain preparation methods.	Remember, Understand, Apply
BP401T.5	Compare chemical reactivity, aromaticity and explain chemical reactions, medicinal uses of different organic compound and heterocycles.	Remember, Understand, Apply, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: MEDICINAL CHEMISTRY I THEORY (BP402T)

CO No.	CO Statement	Bloom's Level
BP402T.1	Summarize the various receptors with location and response of stimulation, history and development of various classes of drugs acting on ANS and CNS	Remember, Understand, Apply
BP402T.2	Relate the pharmacological action of drug with the various physicochemical parameters like stereochemistry, SAR etc	Understand, Apply
BP402T.3	Classify metabolic reactions of the drugs, illustrate factors affecting, predict metabolic reaction of drugs and neurotransmitters.	Remember, Understand, Apply, Analyze, Evaluate
BP402T.4	Define, classify, draw structure, assign IUPAC name, describe mechanism of action, enlist marketed formulations and uses of various categories of drugs acting on ANS and CNS.	Remember, Understand, Apply
BP402T.5	Outline the synthesis of various drugs acting on ANS, CNS and neurotransmitters and relate it with etiology of allied diseases.	Remember, Understand, Apply

COURSE: PHYSICAL PHARMACEUTICS II THEORY (BP403T)

CO No.	CO Statement	Bloom's Level
BP403T.1	State and understand concept, properties and mechanisms of solubility, states of matter, surface tension and interfacial phenomenon, complexation and protein binding, buffers and isotonicity.	Remember, Understand
BP403T.2	Understand and demonstrate various physicochemical properties of drug molecules in the designing and evaluation of the dosage forms.	Remember, Understand
BP403T.3	Explain, classify and compare adsorption, surfactants, complexation, buffered isotonic solutions.	Understand, Create
BP403T.4	Apply the principles of solubility, physicochemical properties, adsorption, complexation and protein binding, buffers in pharmaceutical and biological system.	Apply
BP403T.5	Analyze and evaluate composition of substances, solubility, stability constants and adsorption constants for formulation development	Analyze, Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACOLOGY I – THEORY (BP404T)

CO No.	CO Statement	Bloom's Level
BP404T.1	Analyze how fundamental pharmacological properties can influence route of administration, drug action; drug efficacy and potency; drug levels in the body; potential for drug interactions; drug synergism & antagonism; drug toxicity; and the appropriate choice.	Remember, Understand, Apply, Analyze
BP404T.2	Acquire the knowledge of basic scientific concepts and principles that serve as the foundational underpinnings of the pharmacological sciences including pharmacokinetics; pharmacodynamics; drug metabolism; and adverse drug reactions.	Remember, Understand, Apply, Analyze
BP404T.3	Discuss the process by which new drugs are discovered, developed, tested and finally approved by the authorized agencies for use in the clinic.	Remember, Understand, Apply, Analyze
BP404T.4	Study the specific pharmacology of the major drugs and drug classes which acts on ANS including their indications, contraindications, clinical use, mechanisms of action, physiological effects, pharmacokinetic properties, major adverse effects and clinical	Remember, Understand, Apply, Analyze
BP404T.5	Study the specific pharmacology of the major drugs and drug classes which acts on CNS including their indications, contraindications, clinical use, mechanisms of action, physiological effects, pharmacokinetic properties, major adverse effects and clinical applications.	Remember, Understand, Apply, Analyze

COURSE: PHARMACOGNOSY AND PHYTOCHEMISTRY I THEORY (BP405T)

CO No.	CO Statement	Bloom's Level
BP405T.1	Understand the fundamentals of pharmacognosy like history, scope, development, classification, sources and quality control of crude drugs.	Understand
BP405T.2	Understand and communicate the techniques in cultivation and production of crude drugs and also communicate the value of conservation of medicinal plants to the society.	Understand
BP405T.3	Analyze the impact of plant tissue culture, edible vaccines in pharmacognosy and demonstrate the knowledge of and need for sustainable development in plant science.	Analyze
BP405T.4	Apply the knowledge of different systems of medicine to facilitate improvement in health, well-being and to assess societal, safety issues.	Apply
BP405T.5	Utilize the information regarding primary and secondary metabolites, different plant products, marine drugs systematically to design pharmaceutical formulations.	Remember, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: MEDICINAL CHEMISTRY I – PRACTICAL (BP406P)

CO No.	CO Statement	Bloom's Level
BP406P.1	Synthesize organic compound, perform assay, do calculations, set assembly, follow safety measures, monitor reaction, purify and analyse the synthesised compound.	Remember, Understand, Evaluate
BP406P.2	Explain the reaction, mechanism, applications of synthesised organic compounds, mention the role of each chemical in synthesis and explain principle of assay and partition coefficient.	Remember, Understand, Apply, Evaluate
BP406P.3	Discuss the theoretical and practical knowledge gained from synthesis, assay of organic compounds and partition coefficient.	Remember, Understand, Apply, Analyze

COURSE: PHYSICAL PHARMACEUTICS II – PRACTICAL (BP407P)

CO No.	CO Statement	Bloom's Level
BP407P.1	Communicate and demonstrate various methods of determination of viscosity, particle size and size distribution, chemical kinetics and drug stability in the designing of the dosage forms.	Remember, Understand
BP407P.2	Perform and interpret effective results of experiment with concept behind the experiment.	Apply, Analyze
BP407P.3	Select and apply appropriate data to develop new formulation for society.	Analyze, Evaluate

COURSE: PHARMACOLOGY I – PRACTICAL (BP408P)

CO No.	CO Statement	Bloom's Level
BP408P.1	Demonstrate an understanding of CPCSEA, handling techniques, routes of drug administration, blood withdrawal, serum and plasma separation, anaesthetics and euthanasia used for animal studies.	Apply, Analyze, Evaluate
BP408P.2	Perform the effect of drugs on ciliary motility of frog oesophagus, rabbit eyes, and sleeping time of mice using CD demonstrations	Apply, Analyze, Evaluate
BP408P.3	Demonstrate the study of different drugs on animals such as skeletal muscle relaxants, locomotor activity, anticonvulsant effect, stereotype and anti-catatonic activity, anxiolytic activity and local aesthetics using respective methods.	Apply, Analyze, Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE: INDUSTRIAL PHARMACY I (BP502T)

CO No.	CO Statement	Bloom's Level
BP502T.1	Know the goals, objectives and methods of preformulation studies which are utilized for the development of solid, liquid oral and parenteral dosage forms.	Remember, Understand, Apply
BP502T.2	Know the concepts of formulation, manufacturing techniques, evaluation and packaging for various pharmaceutical dosage forms like tablets, capsules, pellets and liquid orals.	Remember, Understand, Apply, Analyze, Evaluate
BP502T.3	Know the concepts of formulation, manufacturing techniques, evaluation and packaging for various pharmaceutical dosage forms like parenteral products and ophthalmic preparations.	Remember, Understand, Apply, Analyze, Evaluate
BP502T.4	Know the concepts of formulation, manufacturing techniques, quality control and packaging for cosmetics and pharmaceutical aerosols.	Remember, Understand, Apply, Analyze, Evaluate
BP502T.5	Use the effective packaging principles and techniques to classify the packaging material to be used in pharma industry along with its stability aspects and quality control tests.	Remember, Understand, Apply, Analyze, Evaluate

COURSE: PHARMACOLOGY II-THEORY (BP503T)

CO No.	CO Statement	Bloom's Level
BP503T.1	Explain the pharmacology of different drugs acting on cardiovascular system and gain the knowledge regarding hemodynamic and electrophysiology of heart.	Remember, Understand, Apply
BP503T.2	Reacquire the knowledge of haematinic, coagulants, anticoagulants, fibrinolysis, antiplatelet and drugs used in shock and have glimpse on diuretics, anti-diuretics and plasma volume expanders.	Remember, Understand, Apply
BP503T.3	Elucidate the term autacoids with their classification and define terms rheumatism, gout, inflammation along with drugs acting on it and give an account on different inflammatory mediators.	Remember, Understand, Apply
BP503T.4	Explain the concept of endocrine system including anterior pituitary hormone, oral hypoglycemic agents, thyroid hormones, hormone regulating, plasma calcium level and autacoids.	Remember, Understand, Apply
BP503T.5	Develop coherent knowledge of anabolic steroids, sex hormones, oral contraceptives along with drugs acting on uterus, elsewhere discuss and understand term bioassay with their types, principal and applications.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: INDUSTRIAL PHARMACY I - PRACTICAL (BP506P)

CO No.	CO Statement	Bloom's Level
BP506P.1	Ability to design and evaluation of dosage forms like tablets, capsules, parenteral products and cosmetics.	Remember, Understand, Apply, Evaluate, Create
BP506P.2	Critically use the acquired knowledge with skills to work in the pharma formulation and development.	Remember, Understand, Apply, Analyze
BP506P.3	Apply the knowledge of industrial pharmacy for the production of tablets, capsules, parenteral products and cosmetics with good manufacturing practices.	Remember, Understand, Apply, Evaluate, Create

COURSE: PHARMACOLOGY- II PRACTICAL (BP507P)

CO No.	CO Statement	Bloom's Level
BP507P.1	Gain the knowledge of different bioassay method used to study effect of drugs on isolated tissue preparation on experimental animal and explain their use in pharmacology.	Remember, Understand, Apply
BP507P.2	Perform or demonstrate the effects of drugs on isolated tissue preparation on experimental animal.	Remember, Understand, Apply
BP507P.3	Analyze the term pa2 value and pd2 value to maintain relationship between two drugs competing for effect on same receptor.	Remember, Understand, Apply

COURSE: PHARMACOGNOSY AND PHYTOCHEMISTRY- II PRACTICAL (BP508P)

CO No.	CO Statement	Bloom's Level
BP508P.1	Apply the skill of sectioning, staining, mounting and focusing to study macroscopic, microscopic structures and powder characteristics of different plant material	Apply
BP508P.2	Apply appropriate procedures and methods systematically for isolation and detection of phytoconstituents from crude drugs and also screening of these constituents by using chromatographic techniques.	Apply, Analyze
BP508P.3	Gain the depth in writing effective assignments, making effective orals, presentations and documentation in pharmacognosy.	Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: MEDICINAL CHEMISTRY III - THEORY (BP601T)

CO No.	CO Statement	Bloom's Level
BP601T.1	Discuss the antibiotics, antimalarials, antitubercular, antifungals, urinary tract anti-infective agents, quinolone ,antibacterials, anti-protozoals, anthelmintics, sulphonamides and sulfones and folate reductase inhibitors in relation to chemical classification.	Remember, Understand
BP601T.2	Explain life cycle of malarial parasite and of helminths and understand the biological target site in relation	Remember, Understand
BP601T.3	Explain the concept of prodrug with its biological activation in vivo for drugs from various classes.	Remember, Understand
BP601T.4	Explain the protein synthesis and cell wall synthesis of bacteria and drug acting by protein synthesis and cell wall synthesis inhibition	Remember, Understand, Apply
BP601T.5	Describe physiochemical parameters like hydrophobicity, electronic parameter and steric factors that relates with biological activity and study of QSAR model with the help of free Wilson approach and Hansch analysis, explain pharmacophore modelling and doc	Remember, Understand, Apply

COURSE: PHARMACOLOGY III - THEORY (BP602T)

CO No.	CO Statement	Bloom's Level
BP602T.1	Gain the knowledge regarding pharmacology of drugs acting on respiratory system and gastrointestinal tract as well as many other forms of medications like anti-asthmatic drugs, expectorant and antitussive, nasal decongestants, respiratory stimulants.	Remember, Understand, Apply
BP602T.2	Explain the effect of chemotherapy; their general principles and apply the knowledge to understand the effect of antibiotics: penicillin, cephalosporin, chloramphenicol, macrolides, quinolones and fluoroquinolones, tetracycline and amino glycosides.	Remember, Understand, Apply
BP602T.3	Compassion the various disease and the agent which will treat that medical condition like antitubercular agent, antileprotic agent, antifungal agent, antiviral agent, anthelmintic, antimalarial drugs, antiamoebic agents.	Remember, Understand, Apply
BP602T.4	Keep the cognition of various diseases like sexually transmitted diseases and urinary tract infections also have glimpse on chemotherapy of malignancy. Perceive the intended meaning of immunostimulants, immunosuppressant and learn about laboratory produced.	Remember, Understand, Apply
BP602T.5	Recognize the need of chronopharmacology in that rhythm and cycle along with biological clock and their significance leading to chronotherapy. Understand the principle for toxicity (genotoxicity, carcinogenicity teratogenecity, and mutagenecity), poisoning.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: PHARMACEUTICAL BIOTECHNOLOGY- THEORY (BP605T)

CO No.	CO Statement	Bloom's Level
BP605T.1	Explain and recall the historical development in pharmaceutical biotechnology.7. Explain the different techniques used in biotechnology.	Remember, Understand, Apply
BP605T.2	Critically evaluate different methodologies of downstream processing in the purification of biotechnological products.	Remember, Apply, Analyze
BP605T.3	Demonstrate a critical awareness of recent techniques applicable to research in pharmaceutical biotechnology and their roles in effective therapeutic treatments.	Remember, Understand, Apply, Analyze
BP605T.4	Employ the knowledge in to genetic and recombination technology.	Remember, Understand, Apply
BP605T.5	Explain the purification techniques for biotechnology derived products.	Remember, Understand, Apply, Analyze

COURSE: PHARMACEUTICAL QUALITY ASSURANCE-THEORY (BP606T)

CO No.	CO Statement	Bloom's Level
BP606T.1	Importance of quality, quality management, total quality management and quality by design in pharmaceutical industry for development of quality product.	Remember, Understand, Apply
BP606T.2	Importance of organization and personnel for development of good pharmaceutical product.	Remember, Understand, Apply, Analyze
BP606T.3	Explain requirements of good manufacturing practices and good laboratory practices and explain various guidelines for GMP AND GLP.	Remember, Understand, Apply, Analyze, Evaluate
BP606T.4	Give importance of documentation in pharmaceutical industry and details about preparation and utilization of documentation.	Remember, Understand, Apply, Analyze
BP606T.5	Describe the meaning of calibration its importance in pharmaceutical industries and explain in detail validation process for manufacturing, formulation and analysis of formulation with validation protocol.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

COURSE: MEDICINAL CHEMISTRY III- PRACTICAL (BP607P)

CO No.	CO Statement	Bloom's Level
BP607P.1	Synthesize and characterize sulphanilamide, 7-hydroxy, 4-methyl coumarin, chlorobutanol, triphenyl imidazole, tolbutamide and hexamine and preparation of medicinally important compounds or intermediates by microwave irradiation technique	Analyze, Evaluate, Create
BP607P.2	Perform assay of drugs like isonicotinic acid hydrazide, chloroquine, metronidazole, dapsone, chlorpheniramine maleate and benzyl penicillin	Analyze, Evaluate, Create
BP607P.3	Drawing structures and reactions using Chem draw and determination of physicochemical properties such as molecular weight, hydrogen bond donors and acceptors for class of drugs COURSE content using drug design software.	Analyze, Evaluate, Create

COURSE: PHARMACOLOGY III - PRACTICAL (BP608P)

CO No.	CO Statement	Bloom's Level
BP608P.1	Learn, select, and apply appropriate methods and procedures for antiallergic activity, skin and eyes irritation test; know the serum biochemical estimations using semi-auto analyser.	Remember, Understand, Apply
BP608P.2	Learn, select, and apply appropriate methods and procedures for antiallergic activity, skin and eyes irritation test; know the serum biochemical estimations using semi-auto analyser.	Remember, Understand, Apply
BP608P.3	Calculate the dose of drug, pharmacokinetic parameters and ld50 from given data; appropriately utilize statistical mathematics to perform accurate medication calculations and for analysis of clinical experimental data.	Remember, Understand, Apply

COURSE: HERBAL DRUG TECHNOLOGY- PRACTICAL (BP609P)

CO No.	CO Statement	Bloom's Level
BP609P.1	Understand raw material as source of herbal drugs from cultivation to herbal drug product.	Remember, Understand, Create
BP609P.2	Know the WHO and ICH guidelines for evaluation of herbal drugs.	Remember, Understand, Evaluate
BP609P.3	Know the herbal cosmetics, natural sweeteners, and nutraceuticals.	Understand, Apply, Analyze, Create

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE: INSTRUMENTAL METHODS OF ANALYSIS-THEORY (BP701T)

CO No.	CO Statement	Bloom's Level
BP701T.1	Get well acquainted with the properties of electromagnetic radiation, electromagnetic spectra, interaction of electromagnetic radiation with matter and describe theoretical aspect, instrumentation, applications of uv-visible spectrophotometry, fluorimetry.	Remember, Understand, Apply
BP701T.2	Study fundamental modes of vibrations in poly atomic molecules, sample handling, factors affecting vibrations, instrumentation and applications of infra red spectroscopy along with theory, instrumentation, applications of flame photometry and nepheloturbidimetry	Remember, Understand, Apply
BP701T.3	Differentiate between adsorption and partition chromatography, compare thin layer chromatography with paper chromatography in different aspects like methodology used, advantages disadvantages and applications, in addition describe theory of electrophoresis	Understand, Apply, Analyze, Create
BP701T.4	Compare theoretical background of gas chromatography with HPLC and discuss instrumentation, application of both.	Apply, Analyze, Evaluate, Create
BP701T.5	Describe ion exchange chromatography, gel chromatography, affinity chromatography with respect to theory, instrumentation, applications.	Remember, Understand, Apply

COURSE: INDUSTRIAL PHARMACY- II (BP702T)

CO No.	CO Statement	Bloom's Level
BP702T.1	To study the general considerations in pilot plant scale up techniques for solids, liquid orals, semi solids along with relevant documentation. Understand SUPAC guidelines and concept of platform technology.	Remember, Understand
BP702T.2	Explain WHO guidelines and related concepts of technology development and transfer along with all protocols, documentation and agencies available for technology transfer in India.	Remember, Understand
BP702T.3	Explain the role of regulatory affairs department and professionals along with regulatory requirements for drug approval. Understand the entire non clinical drug development concept, clinical research protocols, data presentation, bio statistics and	Remember, Understand
BP702T.4	To study in detail the quality management systems like total quality management, quality by design (QBD), six sigma concept, out of specifications (OOS),and concept of some iso series	Remember, Understand, Apply, Evaluate, Create
BP702T.5	To study the Indian regulatory requirements of central drug standard control organization (CDSCO), state licensing authority and certificate of pharmaceutical product (COPP) along with regulatory requirements and approval procedures for new drugs.	Remember, Understand, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE: PHARMACY PRACTICE (BP703T)

CO No.	CO Statement	Bloom's Level
BP703T.1	Describe the functioning of hospital pharmacy. Identify and assess adverse drug reactions.	Remember, Understand, Apply
BP703T.2	Recognize various drug distribution system in the hospital. Develop the contents of hospital formulary, TDM, medication adherence and community pharmacy management.	Remember, Understand, Apply, Analyze, Evaluate, Create
BP703T.3	Practice education and training program in the hospital and patient counselling	Understand, Apply, Analyze
BP703T.4	Describe the functioning and responsibilities of PTC, DIS and clinical pharmacy.	Understand, Apply, Analyze, Evaluate, Create
BP703T.5	Explain drug store management and inventory control ,interpret clinical laboratory tests of specific disease states	Understand, Apply, Analyze, Evaluate, Create

COURSE: NOVEL DRUG DELIVERY SYSTEM (BP704T)

CO No.	CO Statement	Bloom's Level
BP704T.1	To study advantages, disadvantages, approaches to design controlled release formulations based on diffusion, dissolution and ion exchange principles. Properties of drugs relevant to controlled release formulations. Detail study of polymer.	Remember, Understand, Apply
BP704T.2	To study definition, advantages, disadvantages, concept of microspheres, microparticles, buccal, implantable DDS. Applications and methods of microencapsulation, principles of bioadhesion.	Remember, Understand, Apply
BP704T.3	To study the permeation through skin, factors affecting permeation, permeation enhancers, basic components and formulation approaches of TDDS and GRDDS. Formulation of inhalers nasal sprays, nebulizers.	Remember, Understand, Create
BP704T.4	Explain the concepts targeted drug delivery, liposomes, niosomes, nanoparticles, monoclonal antibodies and their applications.	Remember, Understand
BP704T.5	To study, intra ocular barriers and methods to overcome –preliminary study, ocular formulations and ocuserts, intra uterine devices (IUDS) and applications.	Remember, Understand, Apply

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE: INSRTUMENTAL METHODS OF ANALYSIS (BP705P)

CO No.	CO Statement	Bloom's Level
BP705P.1	Analyze and estimate raw materials, finish products using absorption/ emission spectroscopy, nephelo-turbidimetry.	Analyze, Create
BP705P.2	Analyze amino acids, sugar samples, plant pigments by paper/ thin layer/ column chromatography and study GC, HPLC by demonstration.	Understand, Analyze, Create
BP705P.3	Prepare report, document the result, and answer oral question.	Understand, Analyze, Create

COURSE: PRACTICE SCHOOL (BP706PS)

CO No.	CO Statement	Bloom's Level
BP706PS.1	Collect the information on the marketing concepts and techniques and their applications in the pharmaceutical industry and survey the present pharmaceuticals market.	Apply, Analyze, Evaluate
BP706PS.2	Review the regulatory approval process and their registration in Indian and overseas markets. Regulatory authorities and agencies.	Apply, Analyze, Evaluate
BP706PS.3	Summarize basic terminologies, present global scenario and various methods used to generate safety data in pharmacovigilance.	Apply, Analyze, Evaluate
BP706PS.4	Report CGMP, GAP and GLP in traditional system of medicines including guidelines for evaluation and standardization of herbs and herbal drugs.	Apply, Analyze, Evaluate
BP706PS.5	Review, compile and report the recent advances in the field of quality control and standardization of herbals, pharmacovigilance, pharmaceutical regulatory science, pharma marketing management and explore the problems in the present systems.	Apply, Analyze, Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE: BIOSTATISTICS AND RESEARCH METHODOLOGY (BP801T)

CO No.	CO Statement	Bloom's Level
BP801T.1	Explain introduction of biostatics along with learn the measure of central tendency, dispersion and correlation.	Remember, Understand
BP801T.2	Explain regression analysis, probability theory, parametric tests and non parametric tests.	Understand, Apply, Evaluate
BP801T.3	Discuss the designing of methodology for research and learn the basic concepts of clinical trial along with different types of graphical representation of data.	Apply, Create
BP801T.4	Explain regression modelling and statistical software's.	Understand, Create
BP801T.5	Learn the basic concepts of clinical trial along with basic concept for research, design of experiments and ethical practices.	Remember, Understand, Analyze, Evaluate

COURSE: SOCIAL AND PREVENTIVE PHARMACY (BP802T)

CO No.	CO Statement	Bloom's Level
BP802T.1	Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide.	Remember, Apply
BP802T.2	Have a critical way of thinking based on current healthcare development.	Remember, Understand, Apply
BP802T.3	Evaluate alternative ways of solving problems related to health and pharmaceutical issues.	Remember, Understand, Apply
BP802T.4	Explain the concept of prevention and control of disease.	Remember, Understand
BP802T.5	Understand community services in rural, urban and school health.	Understand, Apply, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE: PHARMA MARKETING MANAGEMENT (BP803ET)

CO No.	CO Statement	Bloom's Level
BP803ET.1	Describe the concept of marketing & pharmaceutical market.	Remember, Understand
BP803ET.2	Discuss concept of product decision & product management in pharmaceutical industry.	Remember, Understand, Apply
BP803ET.3	Discuss the various components of promotion of pharmaceutical products.	Remember, Understand
BP803ET.4	Explain the different pharmaceutical marketing channels & roles and responsibility of professional sales representative.	Remember, Understand
BP803ET.5	Discuss the roles and responsibilities of pricing authorities in India & emerging concepts of marketing.	Remember, Understand

COURSE: PHARMACEUTICAL REGULATORY SCIENCE (BP804ET)

CO No.	CO Statement	Bloom's Level
BP804ET.1	Explain regulatory concepts, process of drug discovery and development including generic drug product development.	Remember, Understand, Analyze, Evaluate
BP804ET.2	Describe the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals in India, united states, European union, Australia, Japan and Canada.	Remember, Understand, Analyze, Evaluate, Create
BP804ET.3	Know the regulatory approval process and their registration in Indian and international markets.	Understand, Apply, Analyze
BP804ET.4	Describe the registration of Indian drug product in overseas market.	Understand, Analyze, Evaluate, Create
BP804ET.5	Explain the development of clinical trial protocols and safety monitoring in clinical trials.	Understand, Apply, Analyze, Evaluate

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College

Principal
B.Pharmacy College

COURSE: PHARMACOVIGILANCE (BP805ET)

CO No.	CO Statement	Bloom's Level
BP805ET.1	Discuss the importance of drug safety monitoring and the development of pharmacovigilance program.	Remember, Evaluate, Create
BP805ET.2	Identify adverse drug reactions and manage it.	Apply, Analyze, Create
BP805ET.3	Explain international standards for classification of diseases and drugs.	Understand, Apply, Analyze, Evaluate
BP805ET.4	Describe about national and international pharmacovigilance program and the terminologies used.	Understand, Apply, Analyze
BP805ET.5	Develop and establish pharmacovigilance program in an organization.	Apply, Analyze

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai

COURSE OUTCOMES OF M. PHARMACY PROGRAMME (AS PER PCI SYLLABUS)

Course Name: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES (MP 101 Theory)

C101.1	To recall selected instrumental analytical techniques (spectroscopic,chromatographic,electrochemical methods)and relate with volumetric analysis.
C101.2	To gain knowledge on interaction of EMR with matter, affinity of matter with stationary phase and mobile phase, physical and chemical changes of matter on heating, potential differences indifferent aqueous and organic solution.
C101.3	To build the analytical understanding in the level of ion, atom, group and molecular structure of organic and inorganic compounds with different functional groups and their applications in pharmacy.
C101.4	To categorize different organic and inorganic compounds using suitable spectroscopy, chromatography, electrophoresis, thermal and immuno assay.
C101.5	To elaborate principle, theory and instruments employed for the analysis of drugs.
C101.6	To maximize knowledge of electrophoresis, immunological, thermal and X-Ray crystallographic techniques.

COURSE NAME: DRUG DELIVERY SYSTEM (MP 102 Theory)

C102.1	To recall the basic concepts of sustained release, controlled release, polymer science and personalized medicine.
C102.2	To explain (impart) the principles and fundamentals of controlled drug delivery systems, protein-peptide drug delivery and vaccine drug delivery systems.
C102.3	To (train) develop the formulations of gastro retentive, ocular, transdermal, protein-peptide and vaccine drug delivery systems.
C102.4	To analyze the formulations of gastro retentive and ocular drug delivery systems.
C102.5	To assess the transdermal and protein-peptide drug delivery systems.
C102.6	To evaluate the formulated vaccine drug delivery systems.

COURSE NAME: MODERN PHARMACEUTICS (MP 103 Theory)

C103.1	To recall the concepts of preformulation and relate them to formulation development.
C103.2	To illustrate the parameters of optimization and its applications in formulation development.
C103.3	To develop validation and calibration master plan as per regulatory guidelines.
C103.4	To categorize the policies of GMP, layout of buildings, equipment and management of production.
C103.5	To explain the principles of tablet compression and compaction.
C103.6	To compile the consolidation parameters to determine the stability of a dosage form.

Shri Balaji Shikshan Prasarak Sanstha B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai.

COURSE NAME: REGULATORY AFFAIR (MP 104 Theory)

C104.1	To recall the concepts of drug product development, innovator and generic products, their drug master file.
C104.2	To outline the scale up post approval changes, post marketing surveillance and outsourcing of bioavailability studies to CRO.
C104.3	To apply the regulatory agencies like USFDA, EU, MHRA, TGA and ROW countries for product approval.
C104.4	To contrast CTD and ECTD format for combination products and medical devices.
C104.5	To compare the submission process of IND, NDA, ANDA and preparation of Medicinal Products Dossier.
C104.6	To build the ability to develop clinical trial protocol, pharmacovigilance and safety monitoring in clinical trials.

COURSE NAME: PHARMACEUTICS PRACTICAL-I (MP 105 Practical)

C105.1	To recall the basic principles of analytical techniques and their instrumentation used for drug analysis.
C105.2	To summarize the preformulation studies and basic excipients used for various controlled/sustained drug delivery systems
C105.3	To make use of various analytical instruments for estimation of drugs in various formulations.
C105.4	To simplify the formulation techniques, prepare matrix tablets, floating tablets and cosmetics.
C105.5	To assess the drug release from sustained and controlled drug delivery systems.
C105.6	To evaluate the dosage forms, construct kinetic plots and determine similarity factor.

COURSE NAME: MOLECULAR PHARMACEUTICS (MP 201 Theory)

C201.1	To define the concepts involved in targeting drug delivery specific to tumor and brain.
C201.2	To outline the formulation, optimization and evaluation of nanoparticles, liposomes and multiparticulate drug carrier systems.
C201.3	To develop nanoparticles, liposomes and multiparticulate and other drug delivery systems for drug delivery.
C201.4	To simplify the formulation of pulmonary drug delivery systems and their evaluation.
C201.5	To perceive the concepts of gene therapy and liposomal gene delivery.
C201.6	To discuss the concepts of therapeutic antisense molecules.

Shri Balaji Shikshan Prasarak Sanstha's B.Pharmacy College

Principal
B.Pharmacy College,
Ambajogai.

COURSE NAME: ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS (MP202Theory)

C202.1	To recall the basic concepts of absorption, distribution, metabolism and excretion of drugs.
C202.2	To understand the mechanisms, interpret various factors affecting drug absorption, distribution, metabolism and excretion of drugs.
C202.3	To apply the pharmacokinetic models for the determination of pharmacokinetic parameters.
C202.4	To analyze the drug product performance by *in-vitro*, *in-vivo* and *in-situ* models.
C202.5	To determine the bioavailability testing protocol of a drug and compare the biocquivalence among marketed products.
C202.6	To predict pharmacokinetic and pharmacodynamic drug interactions.

COURSENAME:COMPUTERAIDEDDRUGDELIVERYSYSTEM(MP203Theory)

C203.1	To recall the basics of computers in pharmaceutical research and development.
C203.2	To illustrate the computational modeling of drug disposition.
C203.3	To utilize the concepts for computer-aided formulation development.
C203.4	To simplify the pharmacokinetic and pharmacodynamic characteristics of drugs by simulations.
C203.5	To assess the applications of computers in clinical data management.
C203.6	To discuss the impact of artificial intelligence, robotics and computational fluid dynamics.

COURSENAME:COSMETICANDCOSMECEUTICALS(MP204Theory)

C204.1	To remember Indian regulatory requirements for manufacture, sale, import and labeling of cosmetics.
C204.2	To outline the biologicalaspectsofcosmetics,basicstructure,functions,commonproblemsassociated with skin, hair and oral cavity.
C204.3	To apply the principles of formulation building blocks for different cosmetic/cosmeceutical products.
C204.4	To simplify the controversialing redients used in the formulation of cosmetics.
C204.5	To justify the cosmeceutical products for solving problems related to skin, hair and oral cavity.
C204.6	To elaborate the regulatory guidelines for herbal cosmetics, herbal ingredients used in hair care, skin care and oral care.

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

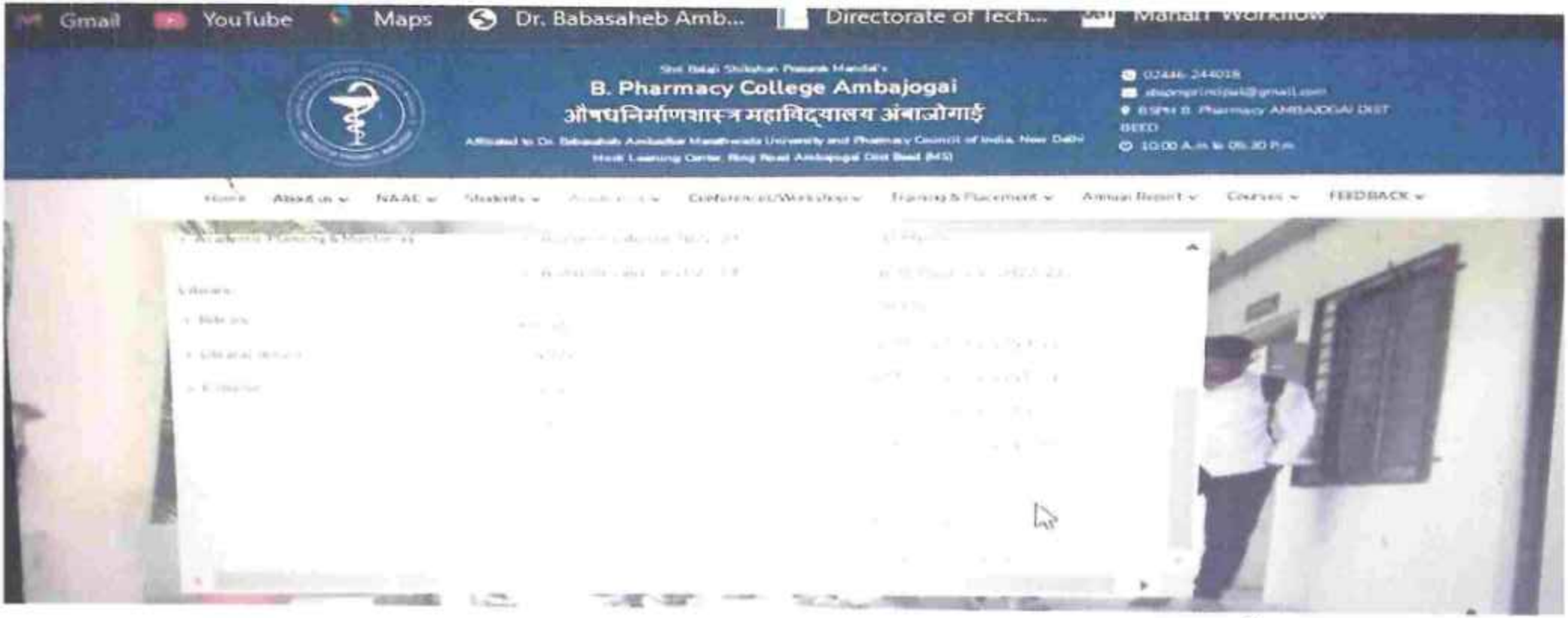
Principal
B.Pharmacy College,
Ambajogai.

COURSE NAME: PHARMACEUTICS PRACTICAL-II(MP205Practical)

C205.1	To recall the basic techniques for preparation of microspheres, liposomes, niosomes and solid dispersions.
C205.2	To compare the dissolution studies of various marketed products.
C205.3	To develop various novel drug delivery systems.
C205.4	To test for drug binding characteristics, cell permeation and bioavailability of the formulations.
C205.5	To evaluate the novel drug delivery systems.
C205.6	To design formulations by QBD concept, uses imulations for estimation of pharmacokinetics and pharmacodynamics.

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.



Shri Balaji Shikshan Prasarak Mandal's
B.Pharmacy College
Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

1. Programme Outcomes

1.Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.

2.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.

3.Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.

4.Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy related computing tools with an understanding of the limitations.

5.Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.

6.Professional Identity: Understand, analyze and communicate the value of their professional roles in society (e.g. healthcare professionals, promoters of health, educators, managers, employers, employees).

7.Pharmaceutical Ethics: Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior 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.

8.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.

9.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.

10.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.

11.Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

Shri Balaji Shikshan Prasarak Mandal's B Pharmacy College, Ambajogai

B. Pharmacy [2022-23]

CO PO Desired Mapping Report

Year : First Year - B.Pharmacy Ist sem
Subject : Pharmaceutical Inorganic Chemistry BP104T - Theory
Faculty : Ms. Manjusha Kareppa
Course Code : BP104T

Course Outcome Details

#	Course Outcome	Description
1	CO1	Recognize different classes of inorganic pharmaceuticals; understand the medicinal and pharmaceutical importance of same.
2	CO2	Describe the major intra-extracellular electrolytes, physiological acid-base balance including concepts of acids, bases, buffers, isotonic solutions and apply knowledge of the same for the preparation of buffered isotonic solutions
3	CO3	Enlist the sources of impurities in pharmaceutical products and describe the limit tests
4	CO4	Classify and describe various inorganic pharmaceuticals like dental products, gastrointestinal agents, antimicrobials, antidotes, expectorants, emetics, haematinics and astringents.
5	CO5	Describe therapeutic and diagnostic role of radiopharmaceuticals including safety parameters to be followed while handling them

Desired Attainment Details

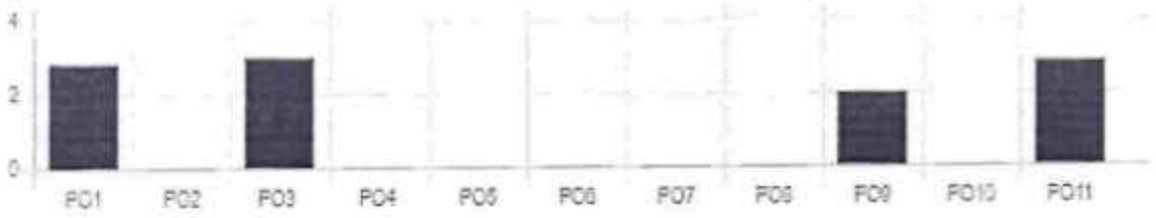
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3		3								3
CO2	3										3
CO3	3		3								3

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

CO4	3										3
CO5	2								2		2
Average	2.80		3.00						2.00		2.80

Desired Attainment Average : 2.65



Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College.
Ambajogai.

Shri Balaji Shikshan Prasarak Mandal's B Pharmacy College, Ambajogai

B. Pharmacy [2022-23]

CO PO Desired Mapping Report

Year : Second Year - B. Pharmacy IVth Sem
Subject : Medicinal Chemistry-I BP402T - Theory
Faculty : Ms. Manjusha Kareppa
Course Code : BP402T

Course Outcome Details

#	Course Outcome	Description
1	CO1	Summarize the various receptors with location and response of stimulation, history and development of various classes of drugs acting on ANS and CNS
2	CO2	Relate the pharmacological action of drug with the various physicochemical parameters like stereochemistry, SAR etc
3	CO3	Classify metabolic reactions of the drugs, illustrate factors affecting, predict metabolic reaction of drugs and neurotransmitters.
4	CO4	Define, classify, draw structure, assign IUPAC name, describe mechanism of action, enlist marketed formulations and uses of various categories of drugs acting on ANS and CNS
5	CO5	Outline the synthesis of various drugs acting on ANS, CNS and neurotransmitters and relate it with etiology of allied diseases.

Desired Attainment Details

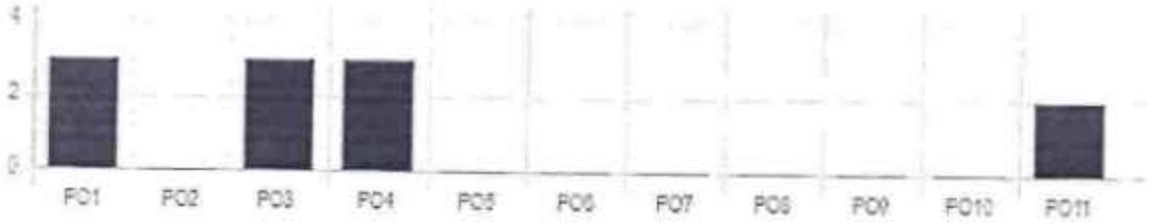
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3										
CO2			3								2
CO3				3							
CO4	3										

Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.

CO5	3										
Average	3.00		3.00	3.00							2.00

Desired Attainment Average : 2.75



Shri Balaji Shikshan Prasarak Mandal's B.Pharmacy College Ambajogai Dist. Beed

Principal
B.Pharmacy College,
Ambajogai.