

ANNEXURE 4.2



MGM School of Pharmacy

(Constituent unit of MGM Institute of Health Sciences Deemed to be University u/s 3 of UGC Act 1956)
Grade 'A++' Accredited by NAAC
Sector-01, Kamothe, Navi Mumbai – 410 209

Program Outcomes (POs) for Diploma Course in Pharmacy

PO.1 Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy.

PO.2 Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

PO.3 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 wellbeing.

PO.4 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).

PO.5 Pharmaceutical Ethics: Honour 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.

PO.6 Communication: Communicate effectively with the pharmacy community and with society, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.

PO.7 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.

PO.8 Environment and sustainability: understand the impact of the professional pharmacy solutions in societal and environmental contexts, demonstrate the knowledge of, and need for sustainable development.

PO.9 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.

Program Specific Outcomes (PSOs) for Diploma Course in Pharmacy

PSO.1 Know different aspects of pharmaceuticals, which include different dosage form and their classification, manufacturing process and uses.

PSO.2 Ability to identify, formulate and solve community & hospital pharmacy problems.

PSO.3 Knowledge of professional and ethical responsibilities as per Pharmaceutical jurisprudence.

PSO.4 Ability to work with clinicians, to determine the role of the laboratory in specific situations to optimize patient safety.

PSO.5 Able to understand the various function of hospital and hospital pharmacy, various in-patient and outpatient services, manufacturing within the hospital.

Course Outcome of D. Pharmacy

Paper Code	ER20-11T
Course Name	PHARMACEUTICS – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe about the different dosage forms and their formulation aspects
CO 2	Explain the advantages, disadvantages and quality control tests of different dosage forms
CO 3	Discuss the importance quality assurance & good manufacturing practices

Paper Code	ER20-11P
Course Name	PHARMACEUTICS – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Calculate the working formula from the given master formula
CO 2	Formulate the dosage form and dispense in appropriate container
CO 3	Design the label with necessary product and patient information

CO 4	Perform the basic quality control tests for the common dosage forms
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Paper Code	ER20-12T
Course Name	PHARMACEUTICAL CHEMISTRY – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the chemical class, structure and chemical name of the commonly used drugs and pharmaceuticals of both organic and inorganic nature
CO 2	Discuss the pharmacological uses, dosage regimen, stability issues and storage conditions of all such chemical substances commonly used as drugs
CO 3	Describe the quantitative and qualitative analysis, impurity testing of the chemical substances given in the official monographs
CO 4	Identify the dosage form & the brand names of the drugs and pharmaceuticals popular in the marketplace

Paper Code	ER20-12P
Course Name	PHARMACEUTICAL CHEMISTRY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Perform the limit tests for various inorganic elements and report
CO 2	Prepare standard solutions using the principles of volumetric analysis
CO 3	Test the purity of the selected inorganic and organic compounds against the monograph standards
CO 4	Synthesize the selected chemical substances as per the standard synthetic scheme
CO 5	Perform qualitative tests to systematically identify the unknown chemical Substances

Paper Code	ER20-13T
Course Name	PHARMACOGNOSY – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>

CO 1	Identify the important/common crude drugs of natural origin
CO 2	Describe the uses of herbs in nutraceuticals and cosmeceuticals

CO 3	Discuss the principles of alternative system of medicines
CO 4	Describe the importance of quality control of drugs of natural origin

Paper Code	ER20-13P
Course Name	PHARMACOGNOSY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Identify the given crude drugs based on the morphological characteristics
CO 2	Take a transverse section of the given crude drugs
CO 3	Describe the anatomical characteristics of the given crude drug under Microscopical conditions
CO 4	Carry out the physical and chemical tests to evaluate the given crude drugs

Paper Code	ER20-14T
Course Name	HUMAN ANATOMY AND PHYSIOLOGY – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the various organ systems of the human body
CO 2	Discuss the anatomical features of the important human organs and tissues
CO 3	Explain the homeostatic mechanisms regulating the normal physiology in the human system
CO 4	Discuss the significance of various vital physiological parameters of the human Body

Paper Code	ER20-14P
Course Name	HUMAN ANATOMY AND PHYSIOLOGY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>

CO 1	Perform the haematological tests in human subjects and interpret the results
CO 2	Record, monitor and document the vital physiological parameters of human subjects and interpret the results
CO 3	Describe the anatomical features of the important human tissues under the Microscopical conditions
CO 4	Discuss the significance of various anatomical and physiological characteristics of the human body

Paper Code	ER20-15T
Course Name	SOCIAL PHARMACY – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Discuss about roles of pharmacists in the various national health programs
CO 2	Describe various sources of health hazards and disease preventive measures
CO 3	Discuss the healthcare issues associated with food and nutritional substances
CO 4	Describe the general roles and responsibilities of pharmacists in public health

Paper Code	ER20-15P
Course Name	SOCIAL PHARMACY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the roles and responsibilities of pharmacists in various National health Programs
CO 2	Design promotional materials for public health awareness
CO 3	Describe various health hazards including microbial sources

CO 4	Advice on preventive measures for various diseases
CO 5	Provide first aid for various emergency conditions including basic life support and cardiopulmonary resuscitation

Paper Code	ER20-21T
Course Name	PHARMACOLOGY – THEOR
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the basic concepts of pharmacokinetics and pharmacodynamics
CO 2	Enlist the various classes and drugs of choices for any given disease condition
CO 3	Advice the dosage regimen, route of administration and contraindications for a given drug
CO 4	Describe the common adverse drug reactions

Paper Code	ER20-21P
Course Name	PHARMACOLOGY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Study and report the local anaesthetic, mydriatic and mitotic effects of the given drug on the rabbit eye
CO 2	Choose appropriate animal experiment model to study the effects of the given drugs acting on the central nervous system and submit the report
CO 3	Perform the effects of given tissues (simulated) on isolated organs / tissues and interpret the results
CO 4	Interpret the dose dependent responses of drugs in various animal experiment Models

Paper Code	ER20-22T
Course Name	COMMUNITY PHARMACY AND MANAGEMENT – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the establishment, legal requirements and effective administration of a community pharmacy
CO 2	Professionally handle prescriptions and dispense medications

CO 3	Counsel patients about the disease, prescription and or non- prescription drugs
CO 4	Perform basic health screening on patients and interpret the reports in the community pharmacy settings

Paper Code	ER20-22P
Course Name	COMMUNITY PHARMACY AND MANAGEMENT – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Handle and fill prescriptions in a professional manner
CO 2	Counsel patients on various diseases and minor ailments
CO 3	Counsel patients on prescription and or non-prescription drugs
CO 4	Design and prepare patient information leaflets
CO 5	Perform basic health screening tests

Paper Code	ER20-23T
Course Name	BIOCHEMISTRY & CLINICAL PATHOLOGY – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the functions of biomolecules
CO 2	Discuss the various functions of enzymes in the human system
CO 3	Explain the metabolic pathways of biomolecules in both physiological and pathological conditions
CO 4	Describe the principles of organ function tests and their clinical significances
CO 5	Describe the principles of organ function tests and their clinical significances
CO 6	Describe the clinical pathology of blood and urine

Paper Code	ER20-23P
Course Name	BIOCHEMISTRY & CLINICAL PATHOLOGY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Qualitatively determine the biomolecules / metabolites in the given biological Samples
CO 2	Determine the normal and abnormal constituents in blood and urine samples and interpret the results of such testing

Paper Code	ER20-24T
Course Name	PHARMACOTHERAPEUTICS - THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Help assessing the subjective and objective parameters of patients in common disease conditions
CO 2	Assist other healthcare providers to analyse drug related problems and provide therapeutic interventions
CO 3	Participate in planning the rational medicine therapy for common diseases
CO 4	Design and deliver discharge counselling for patients

Paper Code	ER20-24P
Course Name	PHARMACOTHERAPEUTICS – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Write the SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases
CO 2	Counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications and monitoring parameters.

Paper Code	ER20-25T
Course Name	HOSPITAL AND CLINICAL PHARMACY – THEORY

Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Explain about the basic concepts of hospital pharmacy administration
CO 2	Manage the supply chain and distribution of medicines within the hospital Settings
CO 3	Assist the other healthcare providers in monitoring drug therapy and address drug related problems
CO 4	Interpret common lab investigation reports for optimizing drug therapy

Paper Code	ER20-25P
Course Name	HOSPITAL AND CLINICAL PHARMACY – PRACTICAL
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Professionally handle and answer the drug information queries
CO 2	Interpret the common laboratory reports
CO 3	Report suspected adverse drug reactions using standard procedures
CO 4	Understand the uses and methods of handling various medical/surgical aids and Devices
CO 5	Interpret and report the drug-drug interactions in common diseases for optimizing the drug therapy

Paper Code	ER20-26T
Course Name	PHARMACY LAW AND ETHICS – THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	Describe the history and evolution of pharmacy law in India
CO 2	Interpret the act and rules regulating the profession and practice of pharmacy in India
CO 3	Discuss the various codes of ethics related to practice standards in pharmacy
CO 4	Interpret the fundamentals of patent laws from the perspectives of pharmacy

Paper Code	UHV-27T
Course Name	UNIVERSAL HUMAN VALUES AND PROFESSIONAL ETHICS-THEORY
Course outcomes	<i>Upon successful completion of the course, students would be able to:</i>
CO 1	To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity, which are the core aspirations of all human beings
CO 2	To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way
CO 3	To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behavior and mutually enriching interaction with Nature



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PROGRAM EDUCATIONAL OBJECTIVES For Diploma in Pharmacy

PEO 1-To develop competence in pharmaceutical knowledge and skills for dispensing, storage, and patient-centred counselling.

PEO 2-To equip pharmacists to serve society through the responsible use of medications and devices to achieve optimal therapeutic outcomes.

PEO 3-To integrate pharmacy knowledge and skills with a fringe of self-motivation so as to increase inclination for higher studies and research.

PEO 4-To develop leadership, ethics, and entrepreneurship skills with hands-on community pharmacy experience for real-world challenges.

Mapping of Mission with PEOs:

Mission Elements	PEO 1	PEO 2	PEO 3	PEO 4
Quality healthcare with compassion and benevolence	✓	✓		✓
Care without prejudice/discrimination at affordable cost	✓	✓		
Research for safer and better healthcare			✓	
Highest ethical standards		✓		✓

Justification for mapping:

Mission Element 1: Deliver quality healthcare with compassion and benevolence.

- ✓ PEO 1 – linked, as it builds competence in dispensing, storage, and patient-centered counselling, ensuring compassionate care.
- ✓ PEO 2 – linked, since it equips pharmacists to ensure responsible use of medicines and devices for better therapeutic outcomes.
- ✓ PEO 4 – linked, because leadership and entrepreneurship in community pharmacy directly translate into patient-focused and benevolent healthcare delivery.

Mission Element 2: Provide care without prejudice or discrimination, at affordable cost.

- ✓ PEO 1 – linked, because dispensing and counselling are fundamental services accessible to all sections of society.
- ✓ PEO 2 – linked, as responsible medication use is aimed at achieving optimal outcomes without bias, ensuring affordability and accessibility.

Mission Element 3: Advance research for safer and better ways of diagnosing, treating, and preventing diseases.

- ✓ PEO 3 – linked, since it encourages motivation for higher studies and research, orienting diploma graduates towards advancing safer and better healthcare practices in future education and roles.

Mission Element 4: Maintain the highest ethical standards in practice and research.

- ✓ PEO 2 – linked, as pharmacists are expected to dispense and monitor medicines responsibly, adhering to ethical standards.
- ✓ PEO 4 – linked, because leadership and entrepreneurship are framed around values, ethics, and professionalism within the community pharmacy ecosystem.