



2.6.1. Programme and course outcomes for all Programmes offered by the institution are stated and displayed on the website and communicated to teachers and students.

The institution has well-defined Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs). The POs and PEO are indicative of the program outcomes [pharmacy knowledge, planning abilities, problem analysis, modern tool usage, leadership skills, professional identity, pharmaceutical ethics, communication, pharmacist and the society, environment and sustainability, and lifelong learning] and the COs are framed using guideline of affiliating university, PCI, New Delhi .

Dissemination of CO, PO, and PSOs

- The Course outcomes for the specific course are mapped with POs and are communicated and explained by faculty to students when the respective course starts.
- It is uploaded on the College website for information to viewers.
- POs are displayed in the central area, library and institutional website
- PSOs are displayed in central area, Departmental notice boards, library, and institute website.
- CO, PO and PSOs are discussed in the student induction program.
- CO, PO, and PSOs are discussed in the faculty meetings regarding their attainment status and the planning for the next academic year.
- CO, PO, and PSOs are attached in the course file.



2.6.1. Programme Outcomes(POs) and Course Outcomes(COs) for all Programmes offered by the institution are stated and displayed on website and attainment of POs and COs are evaluated

S.No	Course	Particular	Page No.
1	D.Pharm	PEO	2
		PSO	3
		PO	4
		CO	5-12
		CO-PO MAPPING	13-25
2	B.Pharm	PEO	26
		PSO	27
		PO	28
		CO	29-51
		CO-PO MAPPING	52-84
3	M.Pharm [Pharmaceutics & Q.A.]	PEO	85
		PSO	86-87
		PO	88-89
		CO	90-95
		CO-PO MAPPING	96-106
4		Dissemination of COs, POs, PSOs, PEO	107-112
5		Dissemination of course file	113-118



**Indore Institute of
Pharmacy**

Affiliated to - BOPH (Bhopal) (Approved by - AICTE (Pharm Dept) & PHS (New Delhi)
Regd. No. - Under UGC Act 1956

D. PHARM



INDORE INSTITUTE OF PHARMACY, INDORE.

VISION


To produce competent pharmacy professionals and value-based future leaders by offering quality education that incorporates training in Holistic Work-Life Management

MISSION

1. To provide quality education and training to a budding pharmacist who can withstand a transforming healthcare system.
2. To bridge the gap between academia and creative professionals for industry 4.2 or 5.0.
3. Honing the students' future with the approach to creating emotional quotient with intelligence quotient for holistic development with the aim of Know thyself and be thyself willing to evolve.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

D. Pharmacy PEO

To enable diploma holders practice as chemist, druggist and industry professionals

To make diploma holders proficient in core technical skills who reflect commitment, ethics and social responsibility

To inculcate lifelong learning habits and entrepreneurship for a successful and productive career.




Principal
Indore Institute of Pharmacy
INDORE (M.P.)


Principal
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

D. Pharm


PSO I – Diploma holder shall possess basic and applied knowledge of pharmacy practice and will enter to the ever-evolving healthcare industry thereby serving the society

PSO II – Diploma holders shall possess holistic development which will focus on more than cognitive development, as it incorporates mind, body, spirit, behaviour, and social interaction which develops the entrepreneurship skills amongst students.

PSO III: To strengthen the professional and ethical attitude, effective communication skills, teamwork skills and an ability to relate pharmaceutical sciences issues to broader social context.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Program Outcomes (D. Pharm.)

- PO1. Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic aspects hospital pharmacy, drug manufacturing and chemist as a profession.
- PO2. Modern tool usage:** Understand the importance and need to use modern pharmacy-related tools and resources with an understanding of the limitations.
- PO3. Leadership skills:** Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and wellbeing and serve society.
- PO4. Professional Identity:** Know the role and responsibility of a pharmacist in society as an educator and health care professional.
- PO5. Pharmaceutical Ethics:** Honour personal values and apply ethical principles in pharmacy profession which reflects in behavior and decision making.
- PO6. Communication:** Communicate effectively with the pharmacy community and with society at large, via different modes of communication to reflect professional competence
- PO7. The Pharmacist and society:** Implement the acquired knowledge and information to assess societal, health, safety and legal issues that are relevant to the professional pharmacy practice.
- PO8. Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and acknowledge the need for sustainable development.
- PO9. Life-long learning:** Recognize the need for, and inculcate the ability to engage in independent and life-long learning.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

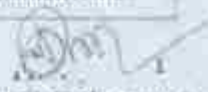


Indore Institute of Pharmacy, Indore
Course Outcome

D Pharm I/PCI		
Course code/ Course name:	Course Outcome	
ER20-11T Pharmaceuticals - Theory	CO1 IT.1	Describe about the different dosage forms and their formulation aspects
	CO1 IT.2	Explain the advantages, disadvantages, and quality control tests of different dosage forms
	CO1 IT.3	Discuss the importance of quality assurance and good manufacturing practices.
ER20-11P Pharmaceuticals - Practical	CO1 IP.1	Calculate the working formula from the given master formula
	CO1 IP.2	Formulate the dosage form and dispense in an appropriate container
	CO1 IP.3	Design the label with the necessary product and patient information
	CO1 IP.4	Perform the basic quality control tests for the common dosage forms
ER20-12T Pharmaceutical Chemistry - Theory	CO1 2T.1	Describe the chemical class, structure and chemical name of the commonly used drugs and pharmaceuticals of both organic and inorganic nature
	CO1 2T.2	Discuss the pharmacological uses, dosage regimen, stability issues and storage conditions of all such chemical substances commonly used as drugs
	CO1 2T.3	Describe the quantitative and qualitative analysis, impurity testing of the chemical substances given in the official monographs
	CO1 2T.4	Identify the dosage forms & the brand names of the drugs and pharmaceuticals popular in the marketplace
ER20-12P Pharmaceutical Chemistry - Practical	CO1 2P.1	Perform the limit tests for various inorganic elements and report
	CO1 2P.2	Prepare standard solutions using the principles of volumetric analysis
	CO1 2P.3	Test the purity of the selected inorganic and organic compounds against the monograph standards
	CO1 2P.4	Synthesize the selected chemical substances as per the standard synthetic scheme
	CO1 2P.5	Perform qualitative tests to systematically identify the unknown chemical substances
ER20-13T Pharmacognosy - Theory	CO1 3T.1	Identify the important common crude drugs of natural origin
	CO1 3T.2	Describe the uses of herbs in nutraceuticals and cosmeceuticals
	CO1 3T.3	Discuss the principles of alternative system of medicines
	CO1 3T.4	Describe the importance of quality control of drugs of natural origin
ER20-13P	CO1 3P	Identify the given crude drugs based on the morphological characteristics




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

Pharma cognos y- Practica l	CO1 3P	Take a transverse section of the given crude drugs
	CO1 3P	Describe the anatomical characteristics of the given crude drug under microscopical conditions
	CO1 3P	Carry out the physical and chemical tests to evaluate the given crude drugs
ER20- 14T Human Anatom y & Physiol ogy- Theory	CO1 4T.1	Describe the various organ systems of the human body
	CO1 4T.2	Discuss the anatomical features of the important human organs and tissues
	CO1 4T.3	Explain the homeostatic mechanisms regulating the normal physiology in the human system
	CO1 4T.4	Discuss the significance of various vital physiological parameters of the human body
ER20- 14P Human Anatom y & Physiol ogy- Practica l	CO1 4P.1	Perform the haematological tests in human subjects and interpret the results
	CO1 4P.2	Record, monitor and document the vital physiological parameters of human subjects and interpret the results
	CO1 4P.3	Describe the anatomical features of the important human tissues under the microscopical conditions
	CO1 4P.4	Discuss the significance of various anatomical and physiological characteristics of the human body
ER20- 15T Social Pharma cy- Theory	CO1	Discuss about roles of pharmacists in the various national health programs.
	CO1 5T.2	Describe various sources of health hazards and disease preventive measures
	CO1 5T.3	Discuss the healthcare issues associated with food and nutritional substances
	CO1 5T.4	Describe the general roles and responsibilities of pharmacists in public health
ER20- 15P Social Pharma cy- Practica l	CO1 5P.1	Describe the roles and responsibilities of pharmacists in various National health programs
	CO1 5P.2	Design promotional materials for public health awareness
	CO1 5P.3	Design promotional materials for public health awareness
	CO1 5P.4	Describe various health hazards including microbial sources
	CO1 5P.5	Advise on preventive measures for various diseases
	CO1 5P.6	Provide first aid for various emergency conditions



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

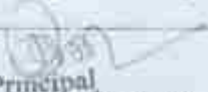


Indore Institute of Pharmacy, Indore
Course Outcome

D Pharm II PCI	
Course code/ Course name	Course Outcome
ER20-21T Pharmacology – Theory	CO21T.1 Describe the basic concepts of pharmacokinetics and pharmacodynamics
	CO21T.2 Enlist the various classes and drugs of choices for any given disease condition
	CO21T.3 Advise the dosage regimen, route of administration and contraindications for a given drug
	CO21T.4 Describe the common adverse drug reactions
ER20-21P Pharmacology – Practical	CO21P.1 Study and report the local anaesthetic, mydriatic and miotic effects of the given drug on the rabbit eye
	CO21P.2 Choose appropriate animal experiment model to study the effects given drugs acting on the central nervous system and submit the report
	CO21P.3 Perform the effects of given tissues (simulated) on isolated organs / tissues and interpret the results
	CO21P.4 Interpret the dose dependent responses of drugs in various animal experiment models
ER20-22T Community Pharmacy & Management – Theory	CO22T.1 Describe the establishment, legal requirements, and effective administration of a community pharmacy
	CO22T.2 Professionally handle prescriptions and dispense medications
	CO22T.3 Counsel patients about the disease, prescription and or non-prescription medicines
	CO22T.4 Perform basic health screening on patients and interpret the reports in the community pharmacy settings
ER20-22P Community Pharmacy & Management – Practical	CO22P.1 Handle and fill prescriptions in a professional manner
	CO22P.2 Counsel patients on various diseases and minor ailments
	CO22P.3 Counsel patients on prescription and or non-prescription medicines
	CO22P.4 Design and prepare patient information leaflets
	CO22P.5 Perform basic health screening tests
ER20-23T Biochemistry & Clinical Pathology – Theory	CO23T.1 Describe the functions of biomolecules
	CO23T.2 Discuss the various functions of enzymes in the human system
	CO23T.3 Explain the metabolic pathways of biomolecules in both physiological and pathological conditions
	CO23T.4 Describe the principles of organ function tests and their clinical significances
	CO23T.5 Determine the biomolecules / metabolites in the given biological samples, both qualitatively and quantitatively




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

	CO23T.6	Describe the clinical pathology of blood and urine.
ER20-23P Biochemistry & Clinical Pathology – Practical	CO23P.1	Qualitatively determine the biomolecules / metabolites in the given biological samples.
	CO23P.2	Determine the normal and abnormal constituents in blood and urine samples and interpret the results of such testing.
ER20-24T Pharmacotherapeutics – Theory	CO24T.1	Help assessing the subjective and objective parameters of patients in common disease conditions.
	CO24T.2	Assist other healthcare providers to analyse drug related problems and provide therapeutic interventions.
	CO24T.3	Participate in planning of the rational medicine therapy for common diseases.
	CO24T.4	Design and deliver discharge counselling for patients.
ER20-24P Pharmacotherapeutics – Practical	CO24P.1	Write SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases.
	CO24P.2	Counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications, and monitoring parameters.
ER20-25T Hospital & Clinical Pharmacy – Theory	CO25T.1	Explain about the basic concepts of hospital pharmacy administration.
	CO25T.2	Manage the supply chain and distribution of medicines within the hospital settings.
	CO25T.3	Assist the other healthcare providers in monitoring drug therapy and address drug related problems.
	CO25T.4	Interpret common lab investigation reports for optimizing drug therapy.
ER20-25P Hospital & Clinical Pharmacy – Practical	CO25P.1	Professionally handle and answer the drug information queries.
	CO25P.2	Interpret the common laboratory reports.
	CO25P.3	Report suspected adverse drug reactions using standard procedures.
	CO25P.4	Understand the uses and methods of handling various medical/surgical aids and devices.
	CO25P.5	Interpret and report the drug-drug interactions in common diseases for optimizing the drug therapy.
ER20-26T Pharmacy Law & Ethics	CO26T.1	Describe the history and evolution of pharmacy law in India.
	CO26T.2	Interpret the act and rules regulating the profession and practice of pharmacy in India.
	CO26T.3	Discuss the various codes of ethics related to practice standards in pharmacy.
	CO26T.4	Interpret the fundamentals of patent laws from the perspectives of pharmacy.






Indore Institute of Pharmacy, Indore
Course Outcome

D.Pharm I		
Course code/ Course name	Course Outcome	
101 Pharmaceutics-I	C101.1	Outline the history of pharmacy practice and pharmacopeias.
	C101.2	Explain the size reduction method and various equipment.
	C101.3	Summarize the Metrology system of weights and measures.
	C101.4	Explain the azyzytic preparation of medicines.
	C101.5	Explain the distillation and sterilization methods.
	C101.6	Study of immunological products
	C101.7	Explain the tablet and capsule manufacturing and evaluation methods with packaging.
102 Pharmaceutical Chemistry I	C102.1	Outlines of medicinal and pharmaceutical importance of inorganic compounds.
	C102.2	Relate the importance of various inorganic compounds.
	C102.3	Outline the classification, properties, and mechanism of action of various inorganic pharmaceuticals compounds
	C102.4	Discuss Electrolytes used for replacement therapy.
	C102.5	Discuss the various radioisotopes and their pharmaceutical applications.
103 Pharmacognosy	C103.1	Summarize general introduction of pharmacognosy, classification of crude drugs, and quality control of drugs of natural origin.
	C103.2	Explain the history and scope of pharmacognosy including indigenous systems of medicine.
	C103.3	Explain the cultivation, collection, processing, and storage of drugs of natural origin.
	C103.4	Discuss the identification of fibers used in sutures and surgical dressings.
104 Biochemistry and Clinical Pathology	C104.1	Discuss the brief introduction to biochemistry.
	C104.2	Illustrate the brief chemistry and role of protein, lipid, and carbohydrates.
	C104.3	Explain the pathology of blood and urine.
105 Human Anatomy and Physiology	C105.1	Explain Structure of cell, function of its components.
	C105.2	Explain nervous system organization.
	C105.3	Illustrate the anatomy, regulation, and disorders of the Digestive system and energetics.
	C105.4	Make use of knowledge related to the anatomy of the Respiratory system and Urinary system.
	C105.5	Relate the interlinked classification, mechanism, and functions of the endocrine system.
	C105.6	Explain the anatomy, physiology, and functions of the reproductive system and aspects of genetics.
106 Health Education and	C106.1	Illustrate the concept of health.
	C106.2	Awareness of Environment and health.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

Community Pharmacy	C106.3	Understand the First aid—emergency treatment in shock.
	C106.4	Explain the Nutrition and health
	C106.5	Motivate learners to participate in environmental protection and improvement
	C106.6	Construct basic knowledge of family planning




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)
24



Indore Institute of Pharmacy, Indore
Course Outcome

D Pharm II	
Course code/ Course name	Course Outcome
201 Pharmaceutics- II	C201.1 Describe the flow of materials in a manufacturing unit by studying the plant layout design.
	C201.2 To be aware of alternative system of medicines, the factors which influence the design of pharmaceutical dosage forms
	C201.3 They come to know how to analyse and compare the difference between various dosages and routes of administrations.
	C201.4 Study of various types of incompatibilities
	C201.5 Explain the Dispensed Medication
202 Pharmaceutical Chemistry II	C202.1 Write the structure, name of the organic compound
	C202.2 Knowledge about the various drugs with chemical name, structure, method of Preparation and uses.
	C202.3 Write the reaction, name the reaction and orientation of reactions
	C202.4 Account for reactivity/stability of compounds.
	C202.5 Identify/confirm the unknown organic compound
203 Pharmacology & Toxicology	C203.1 Infer principle concept of pharmacology
	C203.2 Relate and develop fundamental of pharmacokinetics and pharmacodynamics
	C203.3 Explain the pharmacology of drugs acting on peripheral nervous system.
	C203.4 Make use of pharmacology to study drug activity on CNS
	C203.5 Apply basic knowledge of pharmacology in prevention and treatment of various disease
204 Hospital and Clinical Pharmacy	C204.1 Explain the hospital Pharmacy
	C204.2 Illustrate the concept of drug distribution system in hospital pharmacy
	C204.3 Introduction to clinical pharmacy practice—definition, scope.
	C204.4 Understand the pathophysiology of various diseases like diabetes etc
	C204.5 Introduction about drug clinical toxicity
205 Drug Store and Business Management.	C205.1 Explain the knowledge about commerce.
	C205.2 Illustrate the knowledge of industry and commerce.
	C205.3 Discuss the Drug house management



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

	C205.4	Know about basic of banking and finance.
	C205.5	Discuss the forms of business organisation.
204 Pharmaceutical Jurisprudence	C206.1	Know the Pharmaceutical legislations and their implications in the development and marketing
	C206.2	Know various Indian pharmaceutical Acts, Laws and schedule
	C206.3	Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
	C206.4	Know code of ethics during the pharmaceutical practice




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)
26



Indore Institute of Pharmacy

Affiliated to: B.P.O.D. (Bhopal) (Approved by: AICTE (New Delhi) & PCI (New Delhi))
 Region - India (2002-2017)

Indore Institute of Pharmacy, Indore Course Outcome

PO1 Pharmacy Knowledge	PO2 Modern Tool Usage	PO3 Leadership skill	PO4 Professional Identity	PO5 Pharmaceutics & Ethics	PO6 Communication	PO7 The Pharmacist and Society	PO8 Environment and sustainability	PO9 Lifelong learning					
D-Pharm I PCI					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Course code/ Course name	Course Outcome												
ER20-117 Pharmaceutics - Theory	CO1T.1	Describe about the different dosage forms and their formulation aspects			3	2	1			2			2
	CO1T.2	Explain the advantages, disadvantages, and quality control tests of different dosage forms			3	2	1			2			2
	CO1T.3	Discuss the importance of quality assurance and good manufacturing practices			3	2	1			2			2
ER20-11P Pharmaceutics - Practical	CO1P.1	Calculate the working formula from the given master formula			3	2	1			2			2
	CO1P.2	Formulate the dosage form and dispense it in appropriate container			3	2	1			2			2
	CO1P.3	Design the label with the necessary product and patient information			3	2	1			2			2
	CO1P.4	Perform the basic quality control tests for the common dosage forms			3	2	1			2			2
ER20-127 Pharmaceutical Chemistry - Theory	CO12T.1	Describe the chemical class, structure and chemical name of the commonly used drugs and pharmaceuticals of both organic and inorganic nature			3	2	1			2			2
	CO12T.2	Discuss the pharmacological uses, dosage regimen, stability issues and storage conditions of all such chemical substances commonly used as drugs			3	2	1			2			2



[Signature]
 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

[Signature]
 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

	CO12T.3	Describe the quantitative and qualitative analysis, impurity testing of the chemical substances given in the official monographs of the drugs and pharmaceutically popular in the marketplace	3	2	1	2	2	2
	CO12T.4	Identify the dosage form & the brand names of the drugs and pharmaceutically popular in the marketplace	3	2	1	2	2	2
ER20-12P Pharmaceutical Chemistry -- Practical	CO12P.1	Perform the limit tests for various inorganic elements, and report	3	2	1	2	2	2
	CO12P.2	Prepare standard solutions using the principles of volumetric analysis	3	2	1	2	2	2
	CO12P.3	Test the purity of the selected inorganic and organic compounds against the monograph standards	3	2	1	2	2	2
	CO12P.4	Synthesize the selected chemical substances as per the standard synthetic scheme	3	2	1	2	2	2
	CO12P.5	Perform qualitative tests to systematically identify the unknown chemical substances	3	2	1	2	2	2
ER20-13T Pharmacognosy Y - Theory	CO13T.1	Identify the important/common crude drugs of natural origin	3	2	1	2	2	2
	CO13T.2	Describe the uses of herbs in nutraceuticals and cosmeceuticals	3	2	1	2	2	2
	CO13T.3	Discuss the principles of alternative system of medicines	3	2	1	2	2	2
	CO13T.4	Describe the importance of quality control of drugs of natural origin	3	2	1	2	2	2
ER20-13P Pharmacognosy Y - Practical	CO13P.	Identify the given crude drugs based on the morphological characteristics	3	2	1	2	2	2
	CO13P.	Take a transverse section of the given crude drug	3	2	1	2	2	2
	CO13P.	Describe the anatomical characteristics of the given crude drug under microscopical conditions	3	2	1	2	2	2



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

Course Outcome

	CO13P	Carry out the physical and chemical tests to evaluate the given crude drugs	3	2	1		3		1
ER20-14T Human Anatomy & Physiology - Theory	CO14T.1	Describe the various organ systems of the human body	3	2	1		2		1
	CO14T.2	Discuss the anatomical features of the important human organs and tissues	3	2	1		2		1
	CO14T.3	Explain the homeostatic mechanisms regulating the normal physiology in the human system	3	2	1		2		1
	CO14T.4	Discuss the significance of various vital physiological parameters of the human body	3	2	1		2		1
ER20-14P Human Anatomy & Physiology - Practical	CO14P.1	Perform the haematological tests in human subjects and interpret the results	3	2	1		2		1
	CO14P.2	Record, monitor and document the vital physiological parameters of human subjects and interpret the results	3	2	1		2		1
	CO14P.3	Describe the anatomical features of the important human tissues under the microscopical conditions	3	2	1		2		1
	CO14P.4	Discuss the significance of various anatomical and physiological characteristics of the human body	3	2	1		2		1
ER20-15T Social Pharmacy - Theory	CO15T.1	Discuss about roles of pharmacists in the various national health programs	3	2	1		3	2	1
	CO15T.2	Describe various sources of health hazards and disease preventive measures	3	2	1		3	2	1
	CO15T.3	Discuss the healthcare issues associated with food and nutritional substances	3	2	1		3	2	1
	CO15T.4	Describe the general roles and responsibilities of pharmacists in public health	3	2	1		3	2	1
ER20-15P Social Pharmacy -	CO15P.1	Describe the roles and responsibilities of pharmacists in various National health programs	3	2	1		3	2	1



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

Course Outcome

PO1 Pharmacy Knowledge	PO2 Modern Tool Usage	PO3 Leadershi p skill	PO4 Profession al Identity	PO5 Pharmace utical Ethics	PO6 Communi cation	PO7 The Pharmacist and Society	PO8 Environme nt and sustainabil ity			PO9 Lifelong learning					
							P 0	P 1	PO 6	P 0	P 1	P 0			
D Pharm II PCI							3	2	1	3	2	1	3	2	1
Course code/ Course name	Course Outcome														
ER20-21T Pharmacolo gy - Theory	CO21 T.1	Describe the basic concepts of pharmacokinetics and pharmacodynamics				3	2	1			1	2	2		
	CO21 T.2	Enlist the various classes and drugs of choices for any given disease condition				3	2	1			1	2	2		
	CO21 T.3	Advise the dosage regimen, route of administration and contraindications for a given drug				3	2	1			1	2	2		
	CO21 T.4	Describe the common adverse drug reactions				3	2	1			1	2	2		
ER20-21P Pharmacolo gy - Practical	CO21 P.1	Study and report the local anaesthetic, mydriatic and myotic effects of the given drug on the rabbit eye				3	2	1			1	2	2		
	CO21 P.2	Choose appropriate animal experiment model to study the effects of the given drugs acting on the central nervous system and submit the report				3	2	1			1	2	2		
	CO21 P.3	Perform the effects of given tissues (simulated) on isolated organs / tissues and interpret the results				3	2	1			1	2	2		
	CO21 P.4	Interpret the dose dependent responses of drugs in various animal experiment models				3	2	1			1	2	2		
ER20-22T Community Pharmacy	CO22 T.1	Describe the establishment, legal requirements, and effective administration of a community pharmacy				3	2	1			1	2	2		
	CO22	Professionally handle prescriptions and dispense medications				3	2	1			1	2	2		



[Signature]
Principal
Indore Institute of Pharmacy
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

Management - Theory	T.2												
	CO22 T.3	Counsel patients about the disease, prescription and or non-prescription medicines	3	2	1			3		2		2	
	CO22 T.4	Perform basic health screening on patients and interpret the reports in the community pharmacy settings	3	2	1				2		2		2
ER20-22P Community Pharmacy & Management - Practical	CO22 P.1	Handle and fill prescriptions in a professional manner	3	2	1			1		2		2	
	CO22 P.2	Counsel patients on various diseases and minor ailments	3	2	1		3			1		2	
	CO22 P.3	Counsel patients on prescription and or non-prescription medicines	3	2	1		2			2		2	
	CO22 P.4	Design and prepare patient information leaflets	3	2	1		1			2		2	
	CO22 P.5	Perform basic health screening tests	3	2	1		3			2		2	
ER20-23P Biochemistry & Clinical Pathology - Theory	CO23 T.1	Describe the functions of biomolecules	3	2	1					2		2	
	CO23 T.2	Discuss the various functions of enzymes in the human system	3	2	1					2		2	
	CO23 T.3	Explain the metabolic pathways of biomolecules in both physiological and pathological conditions	3	2	1					2		2	
	CO23 T.4	Describe the principles of organ function tests and their clinical significances	3	2	1					2		2	
	CO23 T.5	Determine the biomolecules / metabolites in the given biological samples, both qualitatively and quantitatively	3	2	1					2		2	
	CO23 T.6	Describe the clinical pathology of blood and urine	3	2	1					2		2	
ER20-23P Biochemistry	CO23 P.1	Qualitatively determine the biomolecules / metabolites in the given biological samples	3	2	1					2		2	



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

y & Clinical Pharmacy - Practical	CO23 P.2	Determine the normal and abnormal constituents in blood and urine samples and interpret the results of such testing	3	2	1			2		2
	CO24 T.1	Help assessing the subjective and objective parameters of patients in common disease conditions	3	2	1			2	2	2
ER20-24T Pharmacy Therapeutics - Theory	CO24 T.2	Assist other healthcare providers to analyse drug related problems and provide therapeutic interventions.	3	2	1			2	2	2
	CO24 T.3	Participate in planning the rational medicine therapy for common diseases	3	2	1			2	2	2
	CO24 T.4	Design and deliver discharge counseling for patients	3	2	1			2	2	2
ER20-24P Pharmacy Therapeutics - Practical	CO24 P.1	Write SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases	3	2	1			2	2	2
	CO24 P.2	Counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications, and monitoring parameters	3	2	1			2	2	2
ER20-25T Hospital & Clinical Pharmacy - Theory	CO25 T.1	Explain about the basic concepts of hospital pharmacy administration	3	2	1			2	2	2
	CO25 T.2	Manage the supply chain and distribution of medicines within the hospital settings	3	2	1			2	2	2
	CO25 T.3	Assist the other healthcare providers in monitoring drug therapy and address drug related problems	3	2	1			2	2	2
	CO25 T.4	Interpret common (a) investigation reports for optimizing drug therapy	3	2	1			2	2	2
ER20-25P Hospital & Clinical Pharmacy - Practical	CO25 P.1	Professionally handle and answer the drug information queries	3	2	1			2	2	2
	CO25 P.2	Interpret the common laboratory reports	3	2	1			2	2	2



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

Practical	CO25 P.3	Report suspected adverse drug reactions using standard procedures	3	2	1			2	2	2
	CO25 P.4	Understand the uses and methods of handling various medical/surgical aids and devices	3	2	1			2	2	2
	CO25 P.5	Interpret and report the drug-drug interactions in common diseases for optimizing the drug therapy	3	2	1			2	2	2
BK20-267 Pharmacy Law & Ethics	CO26 T.1	Describe the history and evolution of pharmacy law in India	3	2	1			2	2	2
	CO26 T.2	Interpret the act and rules regulating the profession and practice of pharmacy in India	3	2	1			2	2	2
	CO26 T.3	Discuss the various codes of ethics related to practice standards in pharmacy	3	2	1			2	2	2
	CO26 T.4	Interpret the fundamentals of patent laws from the perspectives of pharmacy	3	2	1			2	2	2




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Prin.
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

PO1 Pharmacy Knowledge	PO2 Modern Tool Usage	PO3 Leadership skill	PO4 Professiona l Identity	PO5 Pharmaceutica l Ethics	PO6 Communication		PO7 The Pharmacist and Society		PO8 Environment and sustainability		PO9 Life b learning		
					PO1	PO2	PO3	PO4	PO5	PO6		PO7	PO8
D Pharm I					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P
Course code/ Course name	Course Outcome												
101 Pharmaceutics -I	C101.1	Outline the history of pharmacy practice and pharmacocepins.	3	-	1				2			3	
	C101.2	Explain the size reduction method and various equipment.	3	-	1				2			3	
	C101.3	Summarize the Metnology system of weights and measures.	3	-	1				2			3	
	C101.4	Explain the ayurvedic preparation of medicines.	3	-	1				2			3	
	C101.5	Explain the distillation and sterilization methods.	3	-	1				2			3	
	C101.6	Study of immunological products.	3	-	1				2			3	
	C101.7	Explain the tablet and capsule manufacturing and evaluation methods with packaging.	3	2	1				2			3	
102 Pharmaceutics I Chemistry I	C102.1	Outlines of medicinal and pharmaceutical importance of inorganic compounds.	3	-	1				2			3	
	C102.2	Relate the importance of various inorganic compounds.	3	-	1				2			3	
	C102.3	Outline the classification, properties, and mechanism of action of various inorganic	3	-	1				2			3	



Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, IIP or
Course Outcome

		pharmaceuticals compounds								
	C102.4	Discuss Electrolytes used for replacement therapy.	3			1			2	3
	C102.5	Discuss the various radioisotopes and their pharmaceutical applications.	3			1			2	3
103 Pharmacognosy	C103.1	Summarize general introduction of pharmacognosy, classification of crude drugs, and quality control of drugs of natural origin.	3			1			2	3
	C103.2	Explain the history and scope of pharmacognosy including indigenous systems of medicine.	3			1			2	3
	C103.3	Explain the cultivation, collection, processing, and storage of drugs of natural origin.	3			1			2	3
	C103.4	Discuss the identification of fibers used in sutures and surgical dressing.	3			1			2	3
104 Biochemistry and Clinical Pathology	C104.1	Discuss the brief introduction to biochemistry.	3			1			2	3
	C104.2	Illustrate the brief chemistry and role of protein, lipid, and carbohydrates.	3			1			2	3
	C104.3	Explain the pathology of blood and urine.	3			1			2	3
105 Human Anatomy and Physiology	C105.1	Explain Structure of cell, function of its components.	3			1			2	3
	C105.2	Explain nervous system organization	3			1			2	3
	C105.3	Illustrate the anatomy, regulation, and disorders of the Digestive system and energetics.	3			1			2	3
	C105.4	Make use of knowledge related to the anatomy of the Respiratory system and Urinary system	3			1			2	3
	C105.5	Relate the interlinked classification, mechanism, and functions of the endocrine system	3			1			2	3
	C105.	Explain the anatomy, physiology, and functions	3			1			2	3



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy | of
Course Outcome

	6	of the reproductive system and aspects of genetics.								
106 Health Education and Community Pharmacy	C106.1	Illustrate the concept of health.	3		2		2		2	3
	C106.2	Awareness of Environment and health.	3	2	2		2		2	3
	C106.3	Understand the First aid—emergency treatment in shock.	3	2	2		2		2	3
	C106.4	Explain the Nutrition and health	3	2	2		2		2	3
	C106.5	Motivate learners to participate in environmental protection and improvement	3	2	2		2		2	3
	C106.6	Construct basic knowledge of family planning	3	2	2		2		2	3




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

PO1 Pharmacy Knowledge	PO2 Modern Tool Usage	PO3 Leadership skill	PO4 Professional Identity	PO5 Pharmaceut ical Ethics	PO6 Communica tion	PO7 The Pharmacist and Society	PO8 Environment and sustainability	PO9 Lifelong learning					
D Pharm II						P O 1	P O 4	PO5	P O 5	P O 6	P O 7	P O 8	P O 9
Course code/ Course name	Course Outcome												
201/ Pharmac eutics-II	C20 1.1	Describe the flow of materials in a manufacturing unit by studying the plant layout design.				3		1	2			3	
	C20 1.2	To be aware of alternative system of medicines, the factors which influence the design of pharmaceutical dosage forms				3		1	2			3	
	C20 1.3	They come to know how to analyse and compare the difference between various dosages and routes of administrations.				3		1	2			3	
	C20 1.4	Study of various types of incompatibilities				3		1				3	
	C20 1.5	Explain the Dispensed Medication				3		1	2			3	
202/ Pharmac	C20 2.1	Write the structure, name of the organic compound				3		1	2			3	



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

202 Organic Chemistry II	C20 2.2	Knowledge about the various drugs with chemical name, structure, method of Preparation and uses.	3			2		3
	C20 2.3	Write the reaction, name the reaction and orientation of reactions.	3			2		3
	C20 2.4	Account for reactivity/stability of compounds.	3			2		3
	C20 2.5	Identify/confirm the unknown organic compound.	3			2		3
203 Pharmacology & Toxicology	C20 3.1	Understand principle concept of pharmacology.	1		1	2		3
	C20 3.2	Relate and develop fundamental of pharmacokinetics and pharmacodynamics.	3		1	2		3
	C20 3.3	Explain the pharmacology of drugs acting on peripheral nervous system.	3		1	2		3
	C20 3.4	Make use of pharmacology to study drug activity on CNS.	3			2		3
	C20 3.5	Apply basic knowledge of pharmacology in prevention and treatment of various disease.	3			2		3
204 Hospital and Clinical Pharmacy	C20 4.1	Explain the hospital Pharmacy.	3		1	2	2	3
	C20 4.2	Illustrate the concept of drug distribution system in hospital pharmacy.	3		1	2	2	3
	C20 4.3	Introduction to clinical pharmacy practice—definition, scope.	3			2	2	3
	C20 4.4	Understand the pathophysiology of various diseases like diabetes etc.	3		1	2		3
	C20 4.5	Introduction about drug clinical toxicity.	3		1	2		3
205 Drug Store and	C20 5.1	Explain the knowledge about commerce.	2		1	2		3



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

Course Outcome

Business Management	C20 5.2	Illustrate the knowledge of industry and commerce.	3		1	2	1	3
	C20 5.3	Discuss the Drug house management	3		1	2	1	3
	C20 5.4	Know about basics of Banking and finance.	3		1	2	1	3
	C20 5.5	Discuss the forms of business organisation.	3		1	2	1	3
204 Pharmaceutical Jurisprudence	C20 6.1	Know the Pharmaceutical legislations and their implications in the development and marketing	3		1	2	1	3
	C20 6.2	Know various Indian pharmaceutical Acts, Laws and schedule	3		1	2	1	3
	C20 6.3	Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals	3		1	2	1	3
	C20 6.4	Know code of ethics during the pharmaceutical practice	3		1	2	1	3




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



**Indore Institute of
Pharmacy**

Affiliated to - BOPH (Bhopal) | Approved by - AICTE (New Delhi) & PUCHE (Delhi)
Regd. under UGC Act 1956

B. PHARMACY



Indore Institute of Pharmacy, Indore

B. Pharmacy PED


To prepare graduates as successful pharmacy professionals

To make graduates competent in core technical skills who reflect commitment, ethics and social responsibility

To inculcate lifelong learning habits for highly productive career




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

B. Pharm.


PSO I -Pharmacy graduates will possess basic and applied knowledge of pharmaceutical and allied sciences helping them to become competent industry-ready professionals adapting to the needs of different pharmaceutical areas.

PSO II -Pharmacy graduates shall possess interpersonal skills as leader in team in appreciation of professional ethics and societal responsibilities with the attitude of life-long learning and motto of know thyself and will to evolve.

PSO III: To prepare graduate of the program to learn and adapt in a globe of constantly developing trends.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Program Outcomes for Bachelor of Pharmacy

PO1. Pharmacy Knowledge: Possess knowledge and comprehension of the core and applied domains of pharmaceutical sciences, including biomedical sciences, administrative and manufacturing practices with special emphasis on developing soft skills.

PO2. Planning Abilities: Inculcate the ability to arrange the events and meet deadlines as per demand of profession.

PO3. Problem analysis: Inculcate the aptitude and scientific approach to identify the issues during daily practice and address it there and then.

PO4. Modern tool usage: Harness the capability in implementing pharmacy-related instruments, equipment including computing tools with an understanding of the limitations.

PO5. Leadership skills: Learn the quality of an entrepreneur, team-leader, and professional for serving the society.

PO6. Professional Identity: Understand and inculcate habits to earn, preserve and encourage the value of variety of professional roles of a pharmacist in society.

PO7. Pharmaceutical Ethics: Learn to use and apply personal values in professional and social contexts. Apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.

PO8. Communication: Develop oral and written communication skills in tune with the professional role of a pharmacist.

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: Acknowledge the need of developing sustainable development in the field of pharmacy.

PO11. Life-long learning: Recognize and understand that learning is the attitude and a lifelong process to keep pace with the latest advancements in the field and society.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

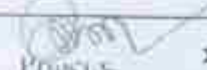

Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy I Year / I Sem		
Course code/ Course name	Course outcomes	
(BP-101T) Human Anatomy and Physiology - I	C101.1	Recall the basics of life processes, structural organization, haemostatic mechanism cellular-level understanding of living beings, and understand the tissue level organization of human being
	C101.2	Explain the gross morphology, structure, and functions of the human integumentary and skeletal system
	C101.3	Summarize the gross morphology, structure, and functions of body fluids and the Lymphatic system.
	C101.4	Explain the morphology, structure, and functions of the peripheral nervous system and sense organs
	C101.5	Summarize the gross morphology, structure, and functions of CVS.
(BP-102T) Pharmaceutical Analysis	C102.1	Outline the basic concepts and techniques of pharmaceutical analysis
	C102.2	Illustrate the principles and applications of acid-base titrations
	C102.3	Development of analytical skills based on quantitative estimation
	C102.4	Explain the fundamentals of redox titration
	C102.5	Application of various volumetric and electrochemical methods
(BP-103T) Pharmaceutics - I	C103.1	Outline the history of pharmacy practice and pharmacopoeias
	C103.2	Explain Solid dosage forms
	C103.3	Summarize monophasic and biphasic systems.
	C103.4	Explain and classify the concept of suppositories and pharmaceutical incompatibilities
	C103.5	Summarize the concept of semisolid dosage forms.
(BP-104T) Pharmaceutical Inorganic Chemistry	C104.1	Outline medicinal and pharmaceutical importance of inorganic compounds
	C104.2	Explain the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
	C104.3	Relate the importance of inorganic gastrointestinal agents
	C104.4	Outline the classification and mechanism of action of various inorganic pharmaceuticals




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy,
INDORE (M.P.)




Indore Institute of Pharmacy, Indore
Course Outcome

	C104.5	Discuss the various radioisotopes and their pharmaceutical applications
(BP-105T) Communication Skills	C105.1	Developing all dimensions of personality in terms of communication skills to express, understand and convey the thoughts impressively in a given situation
	C105.2	Construct an understanding of verbal and nonverbal communication and various styles.
	C105.3	Develop better listening skills and written communication.
	C105.4	Develop interview skills and the art of presentation.
	C105.5	Build the ability for group discussion and leadership skills
(BP-106T) Remedial biology	C.106.1	Classify the diversity of the living systems and five kingdoms of life with the morphology of flowering plants like root, stem, and leaf.
	C.106.2	Know various concepts of body fluids and circulation, digestion and absorption, and breathing and respiration.
	C.106.3	Relate basic components of anatomy & physiology of the human body concerning human reproduction, excretion, neural control, and chemical coordination.
	C.106.4	Define basic concepts of plant nutrients and photosynthesis
	C.106.5	Describe plant respiration, growth, and development of plant and cell structure and tissue
(BP-106T) Remedial mathematics	C.106M.1	Know the introduction of partial fraction, logarithm, function and limits, and continuity.
	C.106M.2	Solve the different types of problems by applying matrices and determinants.
	C.106M.3	Appreciate and understand the principles and solve the problem related to calculus.
	C.106M.4	Summarize the principle and application of analytical Geometry.
	C.106M.5	Explain the principle of geometry, differential equation, and Laplace transform
(BP-107P) Human Anatomy & Physiology (Practical)	C.107.1	Model physiological processes discussed in theory classes through experiments on normal human beings.
	C.107.2	Study microscopic demonstration of the cells & tissues
	C.107.3	Identify various systems using charts, models & specimens
	C.107.4	Analyze human blood sample
(BP-108P) Pharmaceutical Analysis (Practical)	C.108.1	Learn the art of performing limit tests of some common impurities
	C.108.2	Demonstrate the art of preparation and standardization of primary and secondary standards




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)




Indore Institute of Pharmacy, Indore
Course Outcome

	C.108.3	Perform and learn the technique of assay
	C.108.4	Determine Normality using various electro-analytical methods.
(BP-109P) Pharmaceutics 1 (Practical)	C.109.1	Make use of different techniques learned on theory to prepare and dispense various dosage forms
	C.109.2	Formulation of official liquid dosage forms
	C.109.3	Formulation and dispensing of solid dosage form
	C.109.4	Formulation and dispensing of semi-solid dosage form
(BP-110P) Pharmaceutical Inorganic Chemistry (Practical)	C.110.1	Analyze qualitative determination of impurities via Limit Test
	C.110.2	Learn to identify different inorganic compounds
	C.110.3	Determine the purity of Bentonite, Aluminium Hydroxide Gel, etc.
	C.110.4	Elaborate preparation and use of Boric Acid, Potash Alum, and Ferrous Sulphate
(BP-111P) Communication Skills (Practical)	C.111.1	Identify and learn socializing and etiquette
	C.111.2	Adapting the correct use of pronunciation (Consonantal and vowel sounds)
	C.111.3	Develop the use of narration and figures of speech
	C.111.4	Improve writing skills and e-mail etiquette
	C.111.5	Take part in mock personal interview sessions
	C.111.6	Illustrate presentations
(BP-112P) Remedial Biology (Practical)	C.112.1	Demonstrate the basic concepts of experimental biology
	C.112.2	Discuss the anatomy of the frog through computer-assisted techniques
	C.112.3	Model physiological processes discussed in theory classes through experiments on normal human beings.
	C.112.4	Identification and microscopic study of plant parts




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

Practical	CO1SP.2	Design promotional materials for public health awareness	3	2	1	2	2			1
	CO1SP.3	Design promotional materials for public health awareness	3	2	1	3	2			1
	CO1SP.4	Describe various health hazards including microbial sources	3	2	1		2			1
	CO1SP.5	Advise on preventive measures for various diseases	3	2	1		2			1
	CO1SP.6	Provide first aid for various emergency conditions	3	2	1		2			1



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy I Year / IISem		
Course code/ Course name	Course Outcome	
(BP-201T) HUMAN ANATOMY AND PHYSIOLOGY	C201.1	Explain nervous system organization
	C201.2	Illustrate the anatomy, regulation, and disorders of the Digestive system and energetics.
	C201.3	Make use of knowledge related to the anatomy of the Respiratory system and Urinary system
	C201.4	Relate the interlinked classification, mechanism, and functions of the endocrine system
	C201.5	Explain the anatomy, physiology, and functions of the reproductive system and aspects of genetics.
(BP-202T) PHARMACEUTICAL ORGANIC CHEMISTRY -I	C202. 1	Understand the classification and nomenclature of simple organic compounds
	C202. 1	Explaining the mechanism of various reactions with their orientation
	C202. 3	Determining the reactivity and stability of various organic compounds
	C202. 4	Identification and confirmation of different organic compounds
	C202.5	Evaluating the acidity and basicity of different organic compounds with their uses
(BP203T) BIOCHEMISTRY	C203.1	Demonstrate and define fundamental principles and nature of biomolecules
	C203.2	Outline and relate various metabolic pathways & their regulation in the body
	C203.3	Understanding the metabolism of nutrient molecules in various physiological and pathological conditions
	C203.4	Understand the genetic organization of the mammalian genome and functions of DNA in the synthesis of RNAs and proteins
	C203.5	Discuss the catalytic role and therapeutic and diagnostic applications of enzymes.
(BP-204T) PATHOPHYSIOLOGY	C204.1	Outline principles of cell injury adaptation and explain the basic mechanism involved in the process of inflammation and repair
	C204.2	The student will be able to understand the pathophysiology of cardiovascular, respiratory, and renal system
	C204.3	Classify and understand salient features related to the pathophysiology of hematological diseases, endocrine, nervous and gastrointestinal system



[Signature]
Principal
Indore Institute of Pharmacy

Indore -
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore Course Outcome

	C.204.4	Define the etiology and pathophysiological mechanism of diseases like bones and joint disorder with principles of cancer
	C.204.5	Understand the important complications of infectious and sexually transmitted diseases
(BP-205T) COMPUTER APPLICATION IN PHARMACY	C.205.1	Demonstrate the fundamentals of computer
	C.205.2	Define the web technologies and types of databases
	C.205.3	Explain the application of computers in pharmacy
	C.205.4	Outline the various applications of databases in pharmacy
(BP-206T) ENVIRONMENTAL SCIENCES	C.206.1	Create the awareness about natural sources and associated problem
	C.206.2	Construct basic knowledge about different types and functions of ecosystems
	C.206.3	Develop and learn the concept of environmental pollution
	C.206.4	Motivate learners to participate in environmental protection and improvement
	C.206.5	Strive to attain harmony with nature
(BP-207P) HUMAN ANATOMY AND PHYSIOLOGY	C.207.1	Take part in the study of physiological processes by using models and specimen of a few organ systems of the human body
	C.207.2	Illustrate and experiment with human subjects to understand normal body functioning
	C.207.3	Outline family planning devices and pregnancy diagnostic methods
	C.207.4	Relate the histology of vital organs with the help of slides
	C.207.5	Construct blood report by using a cell analyzer
(BP-208P) PHARMACEUTICAL ORGANIC CHEMISTRY -I	C.208.1	Take part in preliminary testing and functional group testing of organic compounds
	C.208.2	Test for melting point and boiling point of organic compounds
	C.208.3	Create derivatives of organic compounds
	C.208.4	Develop solid derivatives from organic compounds
(BP-209P) BIOCHEMISTRY	C.209.1	Take part in qualitative analysis of biomolecules
	C.209.2	Test for the presence of abnormal constituents in blood and urine
	C.209.3	Create buffers of various strengths for use in biochemistry practical
	C.209.4	Develop and learn methods for testing enzyme activity
	C.209.5	Demonstrate and related methods used in polymer





Indore Institute of Pharmacy, Indore
Course Outcome

		degradation
(BP-210P) COMPUTER APPLICATION IN PHARMACY	C.210.1	Create HTML web-page
	C.210.2	Design questionnaire, forms, and reports using MS-Access
	C.210.3	Create invoice tables databases using MS-Access
	C.210.4	Develop and learn methods for content export using web-pages
	C.210.5	Demonstrate and relate methods for drug information retrieval using online tools




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)




Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy II Year / III Sem		
Course code/ Course name	Course Outcome	
(BP-301T) PHARMACEUTICAL CHEMISTRY - III (ORGANIC CHEMISTRY- III)	C.301.1	Interpret the structure reactions and substituents of Benzene and its derivative
	C.301.2	Explain the methods of preparation, reactions and the type of isomerism of the Phenol, aromatic amines and aromatic acids.
	C.301.3	Elaborate various reactions and properties of fats and oils
	C.301.4	Explain synthesis and uses of polynuclear hydrocarbons
	C.301.5	Label general methods of preparation and reactions of Cyclo alkanes compounds
(BP-302T) Physical Pharmaceutics I	C.302.1	Outline solubility and its application in pharmaceuticals
	C.302.2	Explain the basic concept of states of matter with its properties and the Physicochemical properties of drug molecules.
	C.302.3	Explain the role of surfactant, surface tension, interfacial tension, and related properties the of the drug during formulation.
	C.302.4	Explain the concept of complexation and protein binding.
	C.302.5	Apply principles of pH, buffers, and isotonic solutions.
(BP-303T) Microbiology	C.303.1	Explain methods of identification, cultivation, and preservation of various microorganisms (Prokaryotes, Eukaryotes, and Bacteria)
	C.303.2	Interpret the importance and implementation of sterilization and aseptic conditions in pharmaceutical processing and industry
	C.303.3	Define fungi and viruses and sterility testing of pharmaceutical products
	C.303.4	Outline the cell culture technology, aseptic area, and methods of standardization.
	C.303.5	Illustrate methods of identification, cultivation, subculturing, and preservation of various microorganisms, growth of animal cells, and application in the pharmaceutical industry.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

(BP-304T) Pharmaceutical Engineering	C.304.1	Explain various operations of the flow of fluids, size reduction & size separation.
	C.304.2	Relate the principles and operations involved in heat transfer, Evaporation, and Distillation.
	C.304.3	Explain the concept of drying and mixing with the equipment used.
	C.304.4	Outline the concept of Filtration and centrifugation with the equipment used.
	C.304.5	Explain the concept of material of pharmaceutical plant construction, corrosion, and its prevention.
(BP-305P) Pharmaceutical organic chemistry (practical)	C.305.1	Apply the common laboratory techniques like recrystallization and steam distillation.
	C.305.2	Demonstrate the significance and process of determination of oil values including acid values, saponification values and iodine value
	C.305.3	Outline the synthesis of basic organic compounds by various reaction mechanisms including nitration, bromination, acetylation
	C.305.4	Outline the synthesis of basic organic compounds by various reaction mechanisms including hydrolysis, oxidation, and some name reactions.
(BP-306P) Physical Pharmaceutics I (practical)	C.306.1	Explain a basic understanding of solubility determination.
	C.306.2	Demonstrate the significance and process of determination of pKa and partition coefficient, and surface tension by various methods.
	C.306.3	Determine the stability of the compounds by various methods
	C.306.4	Determination of HLB number and CMC of surfactants.
(BP-307P) Microbiology (practical)	C.307.1	Demonstrate and choose amongst different types of equipment and processing
	C.307.2	Illustrate the art of sterilization of glassware and preparation and sterilization of media.
	C.307.3	Illustrate the process of culturing, sub-culturing, and multiple streaking methods
	C.307.4	Make use of various staining techniques (simple, gram's, and acid-fast staining) and the hanging drop method for determining the motility of microorganisms.



[Signature]
Principal
Indore Institute of Pharmacy, INDORE (M.P.)
INDORE-462015

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)




Indore Institute of Pharmacy, Indore
Course Outcome

(BP-308P) Pharmaceutical Engineering (practical)	C.308.1	Determine the radiation constant of different materials used in pharmaceutical manufacturing
	C.308.2	Demonstrate the various factors influencing filtration and evaporation rate
	C.308.3	Explain humidity & drying and construct a psychrometric chart and drying curve
	C.308.4	Demonstrate the principle and working of ball mill and sieve shaker




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy III Year / IV Sem	
Course code/ Course name	Course Outcome
(BP-401T) PHARMACEU TICAL ORGANIC CHEMISTRY	C.401.1 Relate the mechanism of stereoisomerism with organic compounds
	C.401.2 Illustrate basic concepts of Geometrical isomerism of various organic compounds.
	C.401.3 Classify and study the nomenclature of heterocyclic compounds
	C.401.4 Summarize the methods of preparation and properties of organic compounds
	C.401.5 Recall reactions of synthetic importance
(BP-402T) MEDICINAL CHEMISTRY	C.402.1 Recall the concept of physicochemical properties of drug molecules in relation to drug activity.
	C.402.2 To assess Structural Activity relationship, mechanism of action, classification, and uses of drugs acting on the Autonomic nervous system.
	C.402.3 To classify sympathetic and parasympathetic agents with SAR of selective drugs
	C.402.4 To extend the knowledge of drugs acting on Central Nervous Systems like sedatives, antipsychotics anticonvulsants etc.
	C.402.5 To explain the Structural Activity relationship, mechanism of action, classification, and uses of General Anaesthetics
(BP-403T) PHYSICAL PHARMACEU TICS -II	C.403.1 Classify the types of dispersions such as coarse and colloidal and to discuss their importance and properties and explain Suspension and Emulsion with their properties and evaluation parameters.
	C.403.2 Explain rheology, different flow systems, and their importance in pharmaceuticals.
	C.403.3 Examine the role of surfactant, surface tension, interfacial tension, and related properties of the drug during formulation.
	C.403.4 Illustrate the concept of micromeretics
	C.403.5 Demonstrate the role of various physical and chemical factors in drug stability and reaction kinetics




Principal 10
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

(BP-404T) PHARMACOL OGY	C.404.1	Infer principle concept of pharmacology
	C.404.2	Relate and develop fundamentals of pharmacokinetics and pharmacodynamics
	C.404.3	explain the pharmacology of drugs acting on the peripheral nervous system
	C.404.4	Make use of pharmacology to study drug activity in CNS
	C.404.5	Apply basic knowledge of pharmacology in the prevention and treatment of various diseases
(BP-405T) PHARMACOG NOSY and PHYTOCHEMI STRY- I	C405.1	Summarize general introduction of pharmacognosy, classification of crude drugs, and quality control of drugs of natural origin
	C405.2	Explain the cultivation, collection, processing, and storage of drugs of natural origin
	C405.3	Elaborate on the concept of plant tissue culture
	C405.4	Illustrate different systems of medicines and classification of secondary metabolites
	C405.5	Discuss pharmacognostic parameters of primary metabolites, plant products enzymes, proteins, enzymes, and marine drugs
(BP-409P) PHARMACOG NOSY -I	C.409.1	Understand the concept of swelling and foaming index
	C.409.2	Examine the chemical properties of different secondary metabolites
	C.409.3	Estimate different leaf constants
	C.409.4	Appraise the knowledge of quantitative microscopy
	C.409.5	Analyze the crud drugs on basis of physical parameters
(BP-406P) MEDICINAL CHEMISTRY- I	C.407.1	Assess synthesis and characterization of Benzimidazole having antimicrobial property
	C.407.2	Examine the antipyretic property of 1,3-pyrazole with Synthesis and Characterization
	C.407.3	Assess different drugs with Assay
	C.407.4	Estimate partition coefficient of any two drugs




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy III Year / V Sem		
Course code/ Course name	Course Outcome	
Medicinal Chemistry- II (BP 501T)	C 501.1	Summarize the chemistry of antihistaminic, H ₁ - and H ₂ antagonists, Gastric Proton pump inhibitors, and antineoplastic drugs with respect to their pharmacological activity.
	C501.2	Outline the drug metabolic pathway, adverse effects, and therapeutic value of anti-anginal, diuretics, and antihypertensive drugs with their structure-activity relationship.
	C501.3	Know the structure-activity relationship of antiarrhythmic, antihyperlipidemic, coagulant - anticoagulants and drugs used in congestive heart failure
	C501.4	Summarize the synthesis and effects of drugs acting on the endocrine system
	C501.5	Explain the chemistry and physicochemical properties and metabolism of the antidiabetic and local anesthetic drugs.
Industrial Pharmacy- I (BP 502T)	C 502.1	Analyze various Preformulation parameters for different dosage forms (solid, liquid, etc.) including their physical and chemical properties.
	C502.2	Explain formulation considerations (selection of excipients and their role in formulation) and evaluation parameters of tablets, capsules, pellets, and liquid orals.
	C502.3	Outline formulation considerations (selection of excipients and their role in formulation) and evaluation parameters of parenteral and ophthalmic
	C502.4	Formulate various cosmetics preparations like lipsticks, shampoos, cold creams, vanishing creams, etc.
	C502.5	Define, evaluate and perform quality control and stability studies of pharmaceutical aerosols. Explain various pharmaceutical packaging materials, containers, their quality-control tests, and stability aspects
Pharmacology - II (BP 503T)	C 503.1	Demonstrate the mechanism of drug action and its relevance in the treatment of the cardiovascular system.
	C503.2	Explain the mechanism of drug action and its relevance in the treatment of the cardiovascular and urinary system.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy
(M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

	C503.3	Illustrate the correlation of pharmacology with related to Autacoids and related drugs.
	C503.4	Relate and impart the fundamental knowledge of the various aspect of a drug acting on the endocrine system
	C503.5	Outline and emphasis the basic concept of bioassay.
Pharmacognosy and Phytochemistry-II (BP504T)	C504.1	Develop the knowledge about secondary metabolites produced in crude drugs. Outline the utilization of radioactive isotopes.
	C504.2	Explain the general introduction, composition, chemistry, therapeutic use, and application of secondary metabolites. Alkaloids, steroids, etc.
	C504.3	How to carry out the identification, isolation and analysis of Phytoconstituents
	C504.4	Relate Industrial production, estimation and utilization of Phytoconstituents
	C504.5	Summarize the basics of phytochemistry and herbal drug technology
Pharmaceutical Jurisprudence (BP505T)	C505.1	Rephrase and impart the knowledge of the drug and cosmetic act and its rule.
	C505.2	Detail study of the various parameter of the drug and cosmetic act and rules including various schedules, sale of drugs, labeling and packaging of drugs, administration of the act and rules.
	C505.3	Outline Pharmacy act with reference to medicinal and toilet preparation act, Narcotic Drugs and psychotropic substances act.
	C505.4	Summarize the study of salient features of drugs and magic remedies act and its rules, Prevention of cruelty to animal act - 1960 along with National Pharmaceutical pricing authority
	C505.5	Define pharmaceutical legislation, Code of ethics, medical termination of pregnancy act, Right to information act and Introduction to IPR during pharmaceutical practice.
Industrial Pharmacy-I (BP506P)	C506.1	Explain the preformulation study of paracetamol/ aspirin or any drug
	C506.2	Formulate and evaluate solid dosage form (Paracetamol tablet/ Aspirin Tablet/ film coating tablet or granules/ Tetracyclines capsules)
	C506.3	Formulate liquid dosage form (Gluconate injection, Ascorbic acid injection and eye drop)
	C506.4	Formulate semisolid dosage form (eye ointment, cold cream and vanishing cream)
	C506.5	Evaluation of glass test as per IP



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

Pharmacology - II (BP507P)	C 507.1	Relate the techniques and mechanism DRC of various drugs.
	C507.2	Demonstrate isolation of different organs from the laboratory animal by simulated experiments.
	C507.3	Demonstrate isolation of different tissues from the laboratory animal by simulated experiments.
	C507.4	Demonstrate various receptor actions using isolated tissue preparation
Pharmacognosy and Phytochemistry - II (BP508P)	C 508.1	Evaluate the plants and phytochemicals from plant tissue culture on the basis of morphology, histology and characteristics.
	C508.2	Demonstrate isolation and detection of active constituents of various plants.
	C508.3	Demonstrate identification, isolation and analysis of Phytoconstituents
	C508.4	Demonstrate separation and detection of phytoconstituents with the help of TLC and paper chromatography
	C508.5	Analyze the crude drug by chemical test




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy
INDORE (M.P.) 15



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy III Year / VI Sem		
Course code/ Course name	Course Outcome	
(BP 601T) Medicinal Chemistry -III	C601.1	Outline the fundamentals of medicinal chemistry, SAR and synthesis of classical antibiotics like β lactam antibiotics, aminoglycosides and tetracyclines
	C601.2	Classify, and outline the medicinal chemistry, SAR and synthesis of antibiotics, chemotherapeutic agents like macrolides, anti-malarial and prodrugs.
	C601.3	Elaborate the medicinal chemistry, SAR and synthesis of antiviral, antitubercular drugs and urinary tract anti-infectives.
	C601.4	Explain the medicinal chemistry, SAR and synthesis of antifungal drugs, anthelmintics, antiprotozoal and sulphonamide class of drugs.
	C601.5	Explain the concepts of drug design, QSAR and combinatorial chemistry.
Pharmacology III (BP-602T)	C602.1	Explain the pharmacology of drugs acting on the Respiratory and Gastrointestinal system
	C602.2	Explain the mechanism of drug action and its relevance in the treatment of different infectious diseases and cancer
	C602.3	Describe the chemotherapy of antitubercular agents, antifungal, antiviral, anthelmintics and antiamoebic agents.
	C602.4	Describe the chemotherapy for UTI, STD and immunopharmacology
	C602.5	Comprehend the principles of toxicology and treatment of various types of poisoning and the concept of immunopharmacology and chronopharmacology
Herbal Drug Technology (BP- 603T)	C603.1	Impart knowledge of herbs as raw materials, Biodynamic agriculture and the Indian System of Medicine



[Signature]
Principal
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

	C603.2	Outline the general market, scope, and types of products available in nutraceuticals and herb-drug-food interactions.
	C603.3	Explain the sources of and description of herbal cosmetics, herbal excipients and herbal formulations.
	C603.4	Analyze and developed Good manufacturing practices (GMP), patenting and regulatory aspects of herbal drugs.
	C603.5	Outline of plant-based industries and institutions involved in work on medicinal and aromatic plants in India along with schedule-T of drugs and cosmetics act.
Biopharmaceutics and Pharmacokinetics (BP-604T)	C604.1	Explain the concepts of biopharmaceutics and their applications in pharmaceutical development.
	C604.2	Describe the kinetics of elimination. Explain the concept of bioavailability and Bioequivalence
	C604.3	Learn the use of plasma-level time data to calculate secondary pharmacokinetic parameters
	C604.4	Explain the concept of multicompartment models.
	C604.5	Appraise non-linear pharmacokinetics with examples of drugs.
Pharmaceutical Biotechnology (BP-605T)	C605.1	Elaborate on the importance of enzymes biotechnology, Biosensors, Protein Engg. use of microbes in pharmaceutical industries
	C605.2	Learn the use of genetic engineering techniques for the production of pharmaceuticals
	C605.3	outline the concept of Humoral Immunity and cellular immunity
	C605.4	Learn and outline the basic principles of immunology and how it is used for the production of vaccines and blood preservation techniques
	C605.5	Appraise the use of fermentation technology in the pharmaceutical industries
Pharmaceutical Quality Assurance (BP-	C606.1	Outline the cGMP, TQM, QlD, ISO, and NABL accreditation aspects of the pharmaceutical industries



Indore Institute of Pharmacy
INDORE (M.P.)

17

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

60673	C606.2	Explain the important aspects of organization and personnel, premises and equipment and raw material.
	C606.3	Learn and outline the basic principles guidelines issued by various regulatory agencies on quality control and GLP
	C606.4	Appreciate the importance of documentation in the pharmaceutical industry.
	C606.5	Appraise calibration and validation techniques
	Medicinal Chemistry -III (Practical) (BP-607P)	C607.1
C607.2		Perform and understand the assay methods of some important antibiotics
C607.3		Perform the synthesis of important intermediates and drugs using microwave irradiation methods
C607.4		Learn how to use the computer programs to draw chemical structures
C607.5		Learn, apply and appraise Lipinski's rule of five using computer-assisted methods
Pharmacology (Practical) (BP-608P)	C608.1	Outline the concept of dose calculation in pharmacology experiments
	C608.2	Demonstrate the action of drugs on the respiratory and gastrointestinal tract using software
	C608.3	Determine acute toxicity of drugs by given data
	C608.4	Illustrate calculation of Pharmacokinetic parameters
	C608.5	Learn the application of biostatistics methods in experimental pharmacology
Herbal Drug Technology (Practical) (BP-609P)	C609.1	Perform preliminary phytochemical screening of crude drugs
	C609.2	Evaluate the excipients of natural origin
	C609.3	Perform monograph analysis of some pharmacopoeial drugs
	C609.4	Prepare and standardize formulations containing crude drug extracts
	C609.5	Analyze crude drugs for secondary metabolite content



[Signature]
Indore Institute of Pharmacy
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy III Year / VII Sem	
Course code/ Course name	Course Outcome
(PY 701T) Instrumental methods of analysis	C.701.1 Extend knowledge of the introduction, instrumentation and applications of UV Visible Spectroscopy and Fluorimetry.
	C.701.2 Discuss the basic fundamental aspects of quantitative & qualitative analysis of drugs using various analytical instruments like IR Spectroscopy, Flame Photometry, atomic absorption Spectroscopy and Nepheloturbidometry.
	C.701.3 Illustrate the principle and methodology of chromatographic separation by various techniques like Adsorption and partition column chromatography, TLC, Paper chromatography and Electrophoresis with their applications
	C.701.4 Demonstrate the principle, instrumentation and analysis of compounds using GC and HPLC.
	C.701.5 Explain the mechanism, instrumentation and applications of separation techniques i.e. Ion exchange chromatography, Gel chromatography and affinity chromatography.
(PY 702T) Industrial Pharmacy II	C.702.1 Define the process of pilot plant scale-up of techniques
	C.702.2 Outline the process of technology transfer from lab scale to commercial batch.
	C.702.3 Interpret regulatory affairs and regulatory requirements for the approval process of drug products.
	C.702.4 Define quality management and certifications for quality like QbD, GOS, ISO, GLP etc.
	C.702.5 Develop concepts of different Laws and Acts that regulate the pharmaceutical industry as per Indian Regulatory Requirements like CDSCO, COPP etc
(PY 703T) Pharmacy Practice	C.703.1 Outline the organization, layout, and roles of the hospital and hospital pharmacy and community pharmacy. Analyzing the adverse drug reactions and managing them.
	C.703.2 Construct the concepts of drug distribution in hospitals and plan the hospital pharmacy. Infer the need for TDM and summarizing drug therapy of patient through medication chart review and community pharmacy management.



[Signature]
Principal
Indore Institute of Pharmacy
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore

Course Outcome

	C.703.3	Construction of Pharmacy and Therapeutics Committee, Interpretation of the sources of drug information services and prescription orders, Need for patient counseling and importance of training and education program in hospital, Prescribed medication order and communication skills.
	C.703.4	Plan of budget preparation and its implementation, in-clinical pharmacy, Identifying the OTC sales and Rational use of drugs.
	C.703.5	Explain the drug store management and inventory control, Interpretation of laboratory results of specific diseases and summarizing the investigational use of drugs.
(PY 704T) Novel Drug Delivery System	C.704.1	Relate the principles and rationale of drug delivery with the current and future approaches to controlled drug delivery and drug targeting using Polymers
	C.704.2	Summarize microencapsulation and fabrication of mucosal and implantable drug delivery system
	C.704.3	Demonstrate development of site-specific drug delivery like nasopulmonary, transdermal drug delivery systems, GRDDS
	C.704.4	Illustrate the targeted drug delivery system using liposomes, nanoparticles etc.
	C.704.5	Distinguish site-specific drug delivery like ocular and intrauterine drug delivery systems.
(PY 705P) Instrumental methods of analysis (Practical)	C.705.1	Determination of absorption maxima of various organic compounds
	C.705.2	Perform assay and simultaneous estimation by UV spectroscopy
	C.705.3	Separation of compounds by Paper chromatography and TLC
	C.705.4	Demonstrate the analysis of compounds using Spectroscopic methods
	C.705.5	Demonstration of instrumentation of HPLC & Gas Chromatography



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

B. Pharmacy IV Year / VIII Sem		
Course code/ Course name	Course Outcome	
(BP 801) Biostatistics and Research Methodology	C.801.1	Know the various statistical technique, measures of central tendency, measures of dispersion and correlation Solve regression, probability and parametric test
	C.801.2	
	C.801.3	Appreciate non-parametric test need for research, graph and designing methodology
	C.801.4	Know the operation of regression modelling and practical components of industrial and clinical trial problems
	C.801.5	Know design and analysis of experiment
(BP 802) Social and Preventive Pharmacy	C.802.1	Know the concept of health and disease, health education, sociology, and hygiene
	C.802.2	Explain preventive medicines
	C.802.3	Outline the National health program, objective, functioning, and outcome
	C.802.4	Outline the National health program with reference to programs for mother and child, family welfare, tobacco control, malaria prevention, health care for elderly and the role WHO
	C.802.5	Explain community services in rural, urban, and school health
(BP 809E) Cosmetic Science	C.809.1	Classify cosmetic and cosmeceutical products
	C.809.2	Explain principles of formulation and building blocks of skincare products, antiperspirants, deodorants, and hair care products



[Signature]
Principal
Indore Institute of Pharmacy,
Indore (M.P.)

50

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome

	C.809.3	Explain the role of herbs in cosmetic and analytical cosmetics
	C.809.4	Outline principles of cosmetic evaluations
	C.809.5	Explain problems associated with hair and skin
(BP 812ET) Dietary Supplements and Nutraceuticals	C.812.1	Explain functional foods, nutraceuticals, and dietary supplements
	C.812.2	Appreciate the components in dietary supplements and the application
	C.812.3	Know about free radicals, its production, and reaction in the diet
	C.812.4	Outline free radicals in various diseases, antioxidants, and functional food for chronic diseases prevention
	C.812.5	appreciate the regularity and commercial aspect of dietary supplements including health claims
(BP 805) Practice School	C.805.1	outline the basics of Practices in pharmacy
	C.805.2	Know about E-Medicines in India
	C.805.3	Explain of Arogya and Janashudhi Scheme of drug distribution.
	C.805.4	Elaborate learning of drug distribution systems of various pharmacies.
	C.805.5	Survey and submit a detailed printed report help in the evaluation of work done.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.) 22



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B. Pharmacy I Year / I Sem		1										
Course code/ Course name	Course outcomes											
(BP-101T) Human Anatomy and Physiology - I	C101.1 Recall the basics of life processes, structural organization, haemostatic mechanism cellular-level understanding of living beings, and understand the tissue level organization of human being.	2	2		1		-	-	2	-	-	2
	C101.2 Explain the gross morphology, structure, and functions of the human integumentary and skeletal system.	3	2	1	1		-	-	2	-	-	2
	C101.3 Summarize the gross morphology, structure, and functions of body fluids and the Lymphatic system.	3	2	2	1	1		-	2	-	-	2
	C101.4 Explain the morphology, structure, and functions of the peripheral nervous system and sense organs.	3	2	2	1	1		-	2	-	-	2
	C101.5 Summarize the gross morphology, structure, and functions of CVS.	3	1	3	2	1	1	2	2	1	1	3
(BP-102T) Pharmaceutical Analysis	C102.1 Outline the basic concepts and techniques of pharmaceutical analysis.	3	1	3	2	1	1	1	2	1	1	3
	C102.2 Illustrate the principles and applications of acid-base titrations.	3	1	-	-	1	-	-	2	1	1	3



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C102.3	Development of analytical skills based on quantitative estimation	3	1	-	-	1	-	-	2	1	1	3
	C102.4	Explain the fundamentals of redox titration	3	1	-	2	1	-	-	2	1	1	3
	C102.5	Application of various volumetric and electrochemical methods	3	3	1		1	2	2	-	2	-	3
(BP-103T) Pharmaceutics - I	C103.1	Outline the history of pharmacy practice and pharmacopoeias	3	3	1		1	2	2	-	1	-	3
	C103.2	Explain Solid dosage forms	3	3	1		1	2	2	-	2	1	3
	C103.3	Summarize monophasic and biphasic systems	3	2	1		1	2	2	-	2	1	3
	C103.4	Explain and classify the concept of suppositories and pharmaceutical incompatibilities	3	2	1		1	2	2	-	2	1	3
	C103.5	Summarize the concept of semisolid dosage forms	3	1	-	-	-	1	-	2	1	1	3
(BP-104T) Pharmaceutical Inorganic Chemistry	C104.1	Outline medicinal and pharmaceutical importance of inorganic compounds	3	1	-	-	-	1	-	2	2	1	2
	C104.2	Explain the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals	3	1	-	-	-	1	-	2	-	-	3
	C104.3	Relate the importance of inorganic gastrointestinal agents	3	1	-	-	-	1	-	2	-	-	3
	C104.4	Outline the classification and mechanism of action of various inorganic pharmaceuticals	3	1				1	-	2	-	-	3



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C104.5	Discuss the various microorganisms and their pharmaceutical applications	3	1	0	-	-	1	-	-	-	-	3
(BP-105T) Communication Skills	C105.1	Developing all dimensions of personality in terms of communication skills to express, understand and convey the thoughts impressively in a given situation	3	1	2	2	2	2	1	3	1	-	2
	C105.2	Construct an understanding of verbal and nonverbal communication and various styles.	3	1	2	2	2	2	1	3	1	-	2
	C105.3	Develop better listening skills and written communication.	3	1	2	2	2	2	1	3	1	-	2
	C105.4	Develop interview skills and the art of presentation.	3	1	2	2	2	2	1	3	1	-	2
	C105.5	Build the ability for group discussion and leadership skills	3	1	2	2	2	2	1	3	1	-	2
(BP-106T) Remedial Biology	C.106.1	Classify the diversity of the living systems and five kingdoms of life with the morphology of flowering plants like root, stem, and leaf.	3	1	2	2	1	-	-	2	-	-	2
	C.106.2	Know various concepts of body fluids and circulation, digestion and absorption, and breathing and respiration.	3	1	2	2	1	-	-	2	-	-	2
	C.106.3	Relate basic components of anatomy & physiology of the human body concerning human reproduction, excretion, neural control and chemical coordination.	3	1	2	2	1	-	-	2	-	-	2



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C.106.4	Define basic concepts of plant nutrients and photosynthesis	3	1	2	1	-	-	1	2	-	-	2
	C.106.5	Describe plant respiration, growth, and development of plant and cell structure and tissue	3	1	2	1	-	-	1	2	-	-	2
(BP-106) Remedial mathematics	C.106M.1	Know the introduction of partial fraction, logarithm, function and limits, and continuity.	3	1	2	1	-	-	1	2	-	-	2
	C.106M.2	Solve the different types of problems by applying matrices and determinants.	3	1	2	1	-	-	1	2	-	-	2
	C.106M.3	Appreciate and understand the principles and solve the problems related to calculus.	3	1	2	1	-	-	1	2	-	-	2
	C.106M.4	Summarize the principle and application of analytical Geometry.	3	1	2	1	-	-	1	2	-	-	2
	C.106M.5	Explain the principle of geometry, differential equation, and Laplace transform	3	1	2	1	-	-	1	2	-	-	2
(BP-107) Human Anatomy & Physiology (Practical)	C.107.1	Model physiological processes discussed in theory classes through experiments on normal human beings.	3	1	2	1	-	-	1	2	-	-	2
	C.107.2	Study microscopic demonstration of the cells & tissues	3	1	2	1	-	-	1	2	-	-	2
	C.107.3	Identify various systems using charts, models & specimens	3	1	2	1	-	-	1	2	-	-	2
	C.107.4	Analyze human blood sample	3	1	2	1	-	-	1	2	-	-	2
(BP-108) Pharmaceutical	C.108.3	Learn the art of performing limit tests of some common impurities	3	1	2	1	-	-	1	2	-	-	2



Dr.
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

Analysis (Practical)	C.108.2	Demonstrate the art of preparation and standardization of primary and secondary standards	5	2	1	-	3	2	1	-	-	2	
	C.108.3	Perform and learn the technique of assay	3	2	1	-	3	2	1	1	-	-	2
	C.108.4	Determine Normality using various electro-analytical methods.	3	2	1	-	3	2	1	1	-	-	2
(BP-109P) Pharmaceutics I (Practical)	C.109.1	Understand the basics of different dosage forms and pharmacopeia	3	3	1	-	-	2	2	2	-	2	2
	C.109.2	Formulation and dispensing of liquid dosage forms	3	3	1	-	-	2	2	2	-	2	2
	C.109.3	Formulation and dispensing of solid dosage form	3	3	1	-	-	2	2	2	-	2	2
	C.109.4	Formulation and dispensing of semi-solid dosage form	3	3	1	-	-	2	2	2	-	2	2
(BP-110P) Pharmaceutical Inorganic Chemistry (Practical)	C.110.1	Analyse qualitative determination of impurities via Limit Test	3	2	1	-	1	2	1	2	-	-	2
	C.110.2	Learn to identify different inorganic compounds	3	2	1	-	1	2	1	2	-	-	2
	C.110.3	Determine the purity of Bentonite, Aluminium Hydroxide Gel, etc.	3	2	1	-	1	2	1	2	-	-	2
	C.110.4	Elaborate preparation and use of Boric Acid, Potash Alum, and Ferrus Sulphate	3	2	1	-	1	2	1	2	-	-	2
(BP-111P) Communication Skills (Practical)	C.111.1	Identify and learn socializing and etiquette	3	2	1	-	1	1	-	2	-	-	2
	C.111.2	Adapt the correct use of pronunciation (Consonantal and vowel sounds)	3	2	1	-	1	1	-	2	-	-	2
	C.111.3	Develop the use of narration and figures of speech	3	2	1	-	1	1	-	2	-	-	2



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C.111.4	Improve writing skills and e-mail etiquette	3	2	1	-	1	-	-	2	-	-	2
	C.111.5	Take part in mock personal interview sessions	3	2	1	-	1	-	-	2	-	-	2
	C.111.6	Illustrate presentations	3	2	1	-	1	-	-	2	-	-	2
(BP-112P) Remedial Biology (Practical)	C.112.1	Demonstrate the basic concepts of experimental biology	3	2	1	-	1	-	-	2	-	-	2
	C.112.2	Discuss the anatomy of the frog through computer-assisted techniques	3	2	1	-	1	-	-	2	-	-	2
	C.112.3	Model physiological processes discussed in theory classes through experiments on normal human beings.	3	2	1	-	1	-	-	2	-	-	2
	C.112.4	Identification and microscopic study of plant parts	3	2	1	-	1	-	-	2	-	-	2



[Signature]
Principal
Indore Institute of Pharmacy
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

B. Pharmacy I Year / IISem		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Course code/ Course name	Course Outcome	3	2	1	1	1	-	1	-	-	-	1
(BP-201T) HUMAN ANATOMY AND PHYSIOLOGY	C201.1 Explain nervous systems organization	3	2	1	1	1	-	-	1	-	-	1
	C201.2 Illustrate the anatomy, regulation, and disorders of the Digestive system and energetics	3	2	1	1	1	-	-	1	-	-	1
	C201.3 Make use of knowledge related to the anatomy of the Respiratory system and Urinary system	3	2	1	1	1	-	-	1	-	-	1
	C201.4 Relate the interlinked classification, mechanism, and functions of the endocrine system	3	2	1	1	1	-	-	1	-	-	1
	C201.5 Explain the anatomy, physiology, and functions of the reproductive system and aspects of genetics	3	2	1	1	1	-	-	1	-	-	13
(BP-202T) PHARMACEUTICAL ORGANIC CHEMISTRY-I	C202.1 Understand the classification and nomenclature of simple organic compounds	3	2	-	-	-	1	-	2	-	-	3
	C202.1 Explaining the mechanisms of various reactions with their orientation	3	2	-	-	-	1	-	2	-	-	3
	C202.3 Determining the reactivity and stability of various organic compounds	3	2	-	-	-	1	-	2	-	-	3
	C202.4 Identification and confirmation of different organic compounds	3	2	-	-	-	1	-	2	-	-	



Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C202.5	Evaluating the acidity and basicity of different organic compounds with their uses	3	2	-	-	-	1	-	2	-	-	3
(BP203T) BIOCHEMISTRY	C203.1	Demonstrate and define fundamental principles and nature of biomolecules	3	1	-	-	-	1	-	2	1	-	3
	C203.2	Outline and relate various metabolic pathways & their regulation in the body	3	1	-	-	-	1	-	2	1	-	3
	C203.3	Understanding the metabolism of nutrient molecules in various physiological and pathological conditions	3	1	-	-	-	1	-	2	1	-	3
	C203.4	Understand the genetic organization of the mammalian genome and functions of DNA in the synthesis of RNAs and proteins	3	1	-	-	-	1	-	2	1	-	3
	C203.5	Discuss the catalytic role and therapeutic and diagnostic applications of enzymes.	3	1	-	-	-	1	-	2	1	-	3
(BP-204T) PATHOPHYSIOLOGY	C204.1	Define principles of cell injury adaptation and explain the basic mechanism involved in the process of inflammation and repair	3	1	1	1	1	-	-	1	-	-	1
	C204.2	The student will be able to understand the pathophysiology of cardiovascular, respiratory, and renal system	3	1	1	1	1	-	-	1	-	-	1
	C204.3	Classify and understand salient features related to the pathophysiology of hematological diseases, endocrine, nervous and gastrointestinal system	3	1	1	1	1	-	-	1	-	-	1
	C204.4	Define the etiology and pathophysiological mechanism of diseases like bones and joint disorder with principles of cancer	3	1	1	1	1	-	-	1	-	-	1
	C204.5	Understand the important complications of infectious and sexually transmitted diseases	3	1	1	1	1	-	-	1	-	-	1



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

(BP-205T) COMPUTER APPLICATION IN PHARMACY	C.205.1	Demonstrate the fundamentals of computer	1	1	2	2	1	-	1	-	1
	C.205.2	Define the web technologies and types of databases	3	1	2	2	1	-	1	-	1
	C.205.3	Explain the application of computers in pharmacy	3	1	2	2	1	-	1	-	1
	C.205.4	Outline the various applications of databases in pharmacy	3	1	2	2	1	-	1	-	1
(BP-206T) ENVIRONMENTAL SCIENCES	C.206.1	Create the awareness about natural sources and associated problem	3	1	2	2	1	-	1	-	3 3
	C.206.2	Construct basic knowledge about different types and functions of ecosystems	3	1	2	2	1	-	1	-	3 3
	C.206.3	Develop and learn the concepts of environmental pollution	3	1	2	2	1	-	1	-	3 3
(BP-207P) HUMAN ANATOMY AND PHYSIOLOGY	C.207.1	Take part in the study of physiological processes by using models and specimens of a few organ systems of the human body	3	1	1	1	1	-	1	-	1
	C.207.2	Illustrate and experiment with human subjects to understand normal body functioning	3	1	1	1	1	-	1	-	1
	C.207.3	Outline family planning devices and pregnancy diagnostic methods	3	1	1	1	1	-	1	-	1
	C.207.4	Relate the histology of vital organs with the help of slides	3	1	1	1	1	-	1	-	1
	C.207.5	Construct blood report by using a cell analyzer	3	1	1	1	1	-	1	-	1
(BP-208P) PHARMACEUTICAL ORGANIC	C.208.1	Take part in preliminary testing and functional group testing of organic compounds	3	2	1	-	2	1	2	-	3



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

CHEMISTRY-I	C.208.2	Test for melting point and boiling point of organic compounds	3	2	1	-	2	2	1	2	-	-	3
	C.208.3	Create derivatives of organic compounds	3	2	1	-	2	2	1	2	-	-	3
	C.208.4	Develop solid derivatives from organic compounds	3	2	1	-	2	2	1	2	-	-	3
(UP-209P) BIOCHEMISTRY	C.209.1	Take part in qualitative analysis of biomolecules	3	2	1	-	2	2	2	2	-	-	2
	C.209.2	Test for the presence of abnormal constituents in blood and urine	3	2	1	-	2	2	1	2	-	-	2
	C.209.3	Create buffers of various strengths for use in biochemistry practical	3	2	1	-	2	2	1	2	-	-	2
	C.209.4	Develop and learn methods for testing enzyme activity	3	2	1	-	2	2	1	2	-	-	2
	C.209.5	Demonstrate and related methods used in polymer degradation	3	2	1	-	2	2	-	2	-	-	2
(BP-210P) COMPUTER APPLICATION IN PHARMACY	C.210.1	Create HTML, web-page	3	1	1	3	1	1	-	2	1	-	1
	C.210.2	Design questionnaire, forms, and reports using MS-Access	3	1	1	3	1	1	-	2	1	-	1
	C.210.3	Create invoice tables databases using MS-Access	3	1	1	3	1	1	-	2	1	-	1
	C.210.4	Develop and learn methods for content export using web-pages	3	1	1	3	1	1	-	2	1	-	1
	C.210.5	Demonstrate and learn methods for drug information retrieval using online tools	3	1	1	3	1	1	-	2	1	-	1


 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)




 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.) 10

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

B. Pharmacy II Year / III Sem		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Course code/ Course name	Course Outcome	3	2	.	-	1	1	-	2	-	-	3
(BP-301T) PHARMACEUTICAL CHEMISTRY-III (ORGANIC CHEMISTRY-III)	C.301.1 Interpret the structure reactions and substituents of Benzene and its derivative.	3	2	.	-	1	1	-	2	-	-	3
	C.301.2 Explain the methods of preparation, reactions and the type of isomerism of the Phenol, aromatic amines and aromatic acids.	3	2	.	-	1	1	-	2	-	-	3
	C.301.3 Elaborate various reactions and properties of fats and oils	3	2	.	-	1	1	-	2	-	-	3
	C.301.4 Explain synthesis and uses of polynuclear hydrocarbons	3	2	.	-	1	1	-	2	-	-	3
	C.301.5 Label general methods of preparation and reactions of Cycloalkanes compounds	3	2	.	-	1	1	-	2	-	-	3
(BP-302T) Physical Pharmaceutics I	C.302.1 Outline solubility and its application in pharmaceuticals.	3	2	3	1	-	1	2	1	2	-	2
	C.302.2 Explain the basic concept of states of matter with its properties and the Physicochemical properties of drug molecules.	3	2	3	1	-	1	2	1	3	-	2
	C.302.3 Explain the role of surfactants, surface tension, interfacial tension, and related properties of the drug during formulation.	3	2	3	1	-	1	2	1	2	-	2

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)



Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C.302.4	Explain the concept of complexation and protein binding.	3	2	3	1	-	1	2	1	1	-	2
	C.302.5	Apply principles of pH, buffers, and isotonic solutions.	3	2	3	1	-	1	2	1	1	-	2
(BP-303T) Microbiology	C.303.1	Explain methods of identification, cultivation, and preservation of various microorganisms (Prokaryotes, Eukaryotes and bacteria)	3	2	3	1	-	1	1	1	1	1	3
	C.303.2	Interpret the importance and implementation of sterilization and aseptic conditions in pharmaceutical processing and industry.	3	3	3	3	-	1	2	2	1	3	2
	C.303.3	Define fungi and viruses and sterility; testing of pharmaceutical products	1	1	1	3	-	1	1	1	2	2	2
	C.303.4	Outline the cell culture technology, media: uses, and methods of standardization.	1	3	3	3	-	2	1	1	2	3	2
	C.303.5	Illustrate methods of identification, cultivation, subculturing, and preservation of various microorganisms, growth of animal cells, and application in the pharmaceutical industry.	3	3	3	3	-	2	1	1	2	2	2
(BP-304T) Pharmaceutical Engineering	C.304.1	Explain various operations of the flow of fluids, size reduction & size separation.	3	2	1	1	-	1	2	1	2	-	2
	C.304.2	Reiterate the principles and operations involved in heat transfer, Evaporation, and Distillation.	3	2	1	1	-	1	2	1	3	-	2
	C.304.3	Explain the concept of drying and mixing with the equipment used.	3	2	1	1	-	1	2	1	2	-	2


Principal

Indore Institute of Pharmacy,
INDORE (M.P.)




Principal

Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

B. Pharmacy III Year / IV Sem			P	P	P	P	P	P	P	P	P	P	P
			0	0	0	0	0	0	0	0	0	0	0
			1	2	3	4	5	6	7	8	9	10	11
Course code/ Course name		Course Outcome	3	1				1	2				3
(BP-401T) PHARMACUEUTICAL ORGANIC CHEMISTRY	C.40 1.1	Relate the mechanism of stereoisomerism with organic compounds	3	1				1	2				3
	C.40 1.2	Illustrate basic concepts of Geometrical isomerism of various organic compounds	3	1				1	2				3
	C.40 1.3	Classify and study the nomenclature of heterocyclic compounds	3	1				1	2				3
	C.40 1.4	Summarize the methods of preparation and properties of organic compounds.	3	1				1	2				3
	C.40 1.5	Recall reactions of synthetic importance	3	1				1	2				3
(BP-402T) MEDICINAL CHEMISTRY	C.4 02.1	Recall the concept of physicochemical properties of drug molecules in relation to drug activity.	3	1	1			1	2	2			3
	C.4 02.2	To assess Structural Activity relationship, mechanism of action, classification, and uses of drugs acting on the Autonomic nervous system.	3	1	1			1	2	2			3
	C.4 02.3	To classify sympathetic and parasympathetic agents with SAR of selective drugs	3	1	1			1	2	2			3
	C.4 02.4	To extend the knowledge of drugs acting on Central Nervous Systems like sedatives, antipsychotics anticonvulsants etc.	3	1	1			1	2	2			3
C.4 02.5	To explain the Structural Activity relationship, mechanism of action, classification, and uses of General Anesthetics	3	1	1			1	2	2			3	

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C306.4	Determination of HLB number and CMC of surfactants.	3	2	3	1	-	1	2	1	1	-	2
(BP-307P) Microbiology (practical)	C307.1	Demonstrate and choose amongst different types of equipment and processing	3	2	2	3	-	2	2	1	1	2	2
	C307.2	Illustrate the art of sterilization of glassware and preparation and sterilization of media.	3	3	2	2	-	1	2	1	1	2	2
	C307.3	Illustrate the process of culturing, sub-culturing, and multiple streaking methods	3	3	3	3	-	1	1	1	1	1	1
	C307.4	Make use of various staining techniques (simple, gram, and acid-fast staining) and the hanging drop method for determining the motility of microorganisms.	2	3	3	1	-	1	2	1	1	2	1
(IP-308P) Pharmaceutics I Engineering (practical)	C308.1	Determine the radiation constant of different materials used in pharmaceutical manufacturing	3	2	1	1	-	-	-	1	-	-	1
	C308.2	Demonstrate the various factors influencing filtration and evaporation rate	3	2	1	1	-	-	-	1	-	-	1
	C308.3	Explain humidity & drying and constructs psychometric chart and drying curve	3	2	1	1	-	-	-	1	-	-	1
	C308.4	Demonstrate the principle and working of ball mill and sieve shaker	3	2	1	1	-	-	-	1	-	-	1



[Signature]
Principal
Indore Institute of Pharmacy,
(NIPNE-M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
(INDORE (M.P.))

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

(BP-403T) PHYSIC AL PHARM ACEUTI CS-II	C.4 03.1	Classify the types of dispersions such as coarse and colloidal and to discuss their importance and properties and explain Suspension and Emulsion with their properties and evaluation parameters.	3	2	2	1	1	2	2		
	C.4 03.2	Explain rheology, different flow systems, and their importance in pharmaceuticals.	3	2	2	1	1	2	2		
	C.4 03.3	Examine the role of surfactant, surface tension, interfacial tension, and related properties of the drug during formulation.	3	2	2	1	1	2	2		
	C.4 03.4	Illustrate the concept of micromeritics	3	2	2	1	1	2	2		
	C.4 03.5	Demonstrate the role of various physical and chemical factors in drug stability and reaction kinetics	3	2	2	1	1	2	2		
(BP-404T) PHARM ACOLO GY	C.40 4.1	Infer principle concept of pharmacology	3	2	2	1	1	2	2		
	C.40 4.2	Relate and develop fundamentals of pharmacokinetics and pharmacodynamics	3	2	2	1	1	2	2		
	C.40 4.3	explain the pharmacology of drugs acting on the peripheral nervous system	3	2	2	1	1	2	2		
	C.40 4.4	Make use of pharmacology to study drug activity in CNS	3	2	2	1	1	2	2		
	C.40 4.5	Apply basic knowledge of pharmacology in the prevention and treatment of various diseases	3	1	2	1	1	2	2		
(BP-405T) PHARM ACOGN OSY and PHYTO	C.40 5.1	Summarize general introduction of pharmacognosy, classification of crude drugs, and quality control of drugs of natural origin	3	1	1		1	1	2	1	2
	C.40 5.2	Explain the cultivation, collection, processing, and storage of drugs of natural origin	3	1	1		1	1	2	1	2



Principal
Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

CHEMIS TRY-1	C40 5.3	Elaborate on the concept of plant tissue culture	3	1	1		1	1	2	1	1	2
	C40 5.4	Illustrate different systems of medicines and classification of secondary metabolites	3	1	1		1	1	2	1	1	2
	C40 5.5	Discuss pharmacognostic parameters of primary metabolites, plant products, enzymes, proteins, enzymes, and marine drugs	3	1	1		1	1	2	1	1	2
(BP- 409P) PHARM ACOGN OSY-I	C4 09.1	Understand the concept of swelling and foaming index	3	1	1		1					3
	C4 09.2	Examine the chemical properties of different secondary metabolites	3	1	1		1					3
	C4 09.3	Estimate different leaf constants	3	1	1		1					3
	C4 09.4	Appraise the knowledge of quantitative microscopy	3	1	1		1					3
	C4 09.5	Analyze the oral drugs on basis of physical parameters	3	1	1		1					3
(BP- 406P) MEDICAL CHEMIS TRY-1	C4 07.1	Assess synthesis and characterization of Benzimidazole having antimicrobial property	3	2	2		2	2	1	2	1	2
	C4 07.2	Examine the anti pyretic property of 1,3-pyrazole with Synthesis and Characterization	3	2	2		2	2	1	2	1	2
	C4 07.3	Assess different drugs with Assay	3	2	2		2	2	1	2	1	2
	C4 07.4	Estimate partition coefficient of any two drugs	3	2	2		2	2	1	2	1	2



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

(BP-407P) PHYSICAL PHARMACEUTICS II	C40 5.1	Summarize general introduction of pharmacognosy, classification of crude drugs, and quality control of drugs of natural origin	3	2	1			1	2	1	1	2	
	C40 5.2	Explain the cultivation, collection, processing, and storage of drugs of natural origin	3	2	1			1	1	2	1	1	2
	C40 5.3	Elaborate the concept of plant tissue culture	3	2	1			1	1	2	1	1	2
	C40 5.4	Illustrate different systems of medicines and classification of secondary metabolites	3	2	1			1	1	2	1	1	2
	C40 5.5	Study of pharmacognostical parameters of primary metabolites, plant products enzymes, proteins, enzymes, and marine drugs	3	2	1			1	1	2	1	1	2
(BP-408P) PHARMACOLOGICAL	C40 8.1	Identify and study common laboratory animals	3	2	1			1	1	2	1	1	2
	C40 8.2	Analyze commonly used instruments in experimental pharmacology	3	2	1			1	1	2	1	1	2
	C40 8.3	Illustrate the maintenance of laboratory animals	3	2	1			1	1	2	1	1	2
	C40 8.4	Explain common laboratory techniques like blood withdrawal etc	3	2	1			1	1	2	1	1	2
	C40 8.5	Estimate the effect of drugs with different animal models	3	2	1			1	1	2	1	1	2

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Principal
Indore Institute of Pharmacy,
INDORE (M.P.) 18

4/2

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C502.3	Outline formulation considerations (selection of excipients and their role in formulation) and evaluation parameters of parenteral and ophthalmic	3	1	1	1	2	1		2	
	C502.4	Formulate various cosmetics preparations like lipsticks, shampoo, cold creams, vanishing creams, etc.	3	1		1	2	1		3	
	C502.5	Define, evaluate and perform quality control and stability studies of pharmaceutical aerosols. Explain various pharmaceutical packaging materials, containers, their quality-control tests, and stability aspects	3	1		1	2	1		2	
Pharmaceuticals - II (HP503T)	C503.1	Demonstrate the mechanism of drug action and its relevance in the treatment of the cardiovascular system.	3	1	1	1	1	3	3	2	3
	C503.2	Explain the mechanism of drug action and its relevance in the treatment of the cardiovascular and urinary system.	3	1	1	1	1	3	3	2	3
	C503.3	Illustrate the correlation of pharmacology with related to Antacids and related drugs.	3	1	1	1	1	3	3	2	3
	C503.4	Relate and impart the fundamental knowledge of the various aspect of a drug acting on the endocrine system	3	1	1	1	1	3	3	2	3
	C503.5	Outline and emphasize the basic concept of: bioassay.	3	1	1	1	1	3	3	3	3
Pharmacology and Phytochemistry - II (HP504T)	C504.1	Develop the knowledge about secondary metabolites produced in crude drugs. Outline the utilization of radioactive isotopes.	3		2	2	2	2	1	2	3
	C504.2	Explain the general introduction, composition, chemistry, therapeutic use, and application of secondary metabolites. Alkaloids, steroids, etc.	3		2		2	2	1	2	3



Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	CS04.3	How to carry out the identification, isolation and analysis of Phytoconstituents	3		2	2		2	2	1	2	2	2
	CS04.4	Retire Industrial production, estimation and utilization of Phytoconstituents	3		2	2		2	2	1	3	3	3
	CS04.5	Summarize the basics of phytochemistry and herbal drug technology	3		2	2		2	2	1	2	3	3
Pharmaceutical Jurisprudence (BP503T)	C505.1	Rephrase and impart the knowledge of the drug and cosmetic act and its rule.	3					3	3	1	3		2
	CS05.2	Detail study of the various parameter of the drug and cosmetic act and rules including various schedules, sale of drugs, labeling and packaging of drugs, administration of the act and rules.	3					3	3	1	3		2
	CS05.3	Outline Pharmacy act with reference to medicinal and toilet preparation act, Narcotic Drugs and psychotropic substances act.	3					3	3	1	3		2
	CS05.4	Summarize the study of salient features of drugs and magic remedies act and its rules, Prevention of cruelty to animal act - 1960 along with National Pharmaceutical pricing authority	3					3	3	1	3		2
	CS05.5	Define pharmaceutical legislation, Code of ethics, medical termination of pregnancy act, Right to information act and Introduction to IPR during pharmaceutical practice.	3					3	3	1	3		2
Industrial Pharmacy-I (BP506P)	C506.1	Explain the preformulation study of paracetamol/ aspirin or any drug.	3	1	2	2	1	2					3
	CS06.2	Formulate and evaluate solid dosage form (Paracetamol tablet/ Aspirin Tablet/ film coating tablet or granules / Tetracyclines capsules).	3	2	2	3	1	3	2				3



Principal
 Indore Institute of Pharmacy
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	CS06.3	Formulate liquid dosage form (Gluconate injection, Ascorbic acid injection and eye drop)	3	2	2	1	1	3	2	3	
	CS06.4	Formulate semisolid dosage form (eye ointment, cold cream and soothing cream)	3	2	2	1	1	3	1	3	
	CS06.5	Evaluation of glass test as per IP	3	1	2	1	1	2	2	3	
Pharmacology-II (BPS07P)	C307.1	Rebate the techniques and mechanism DBC of various drugs.	3	1	2	3	1	3	3	3	
	CS07.2	Demonstrate isolation of different organs from the laboratory animal by simulated experiments.	3	1	2	3	1	3	3	3	
	CS07.3	Demonstrate isolation of different tissues from the laboratory animal by simulated experiments.	3	1	2	3	1	3	3	3	
	CS07.4	Demonstrate various receptor actions using isolated tissue preparation	3	1	2	3	1	2	3	3	
Pharmacognosy and Phytochemistry-II (BPS08P)	C308.1	Evaluate the plants and phytochemicals from plant tissue culture on the basis of morphology, histology and characteristics	3	1	2	2	1	1	1	2	2
	CS08.2	Demonstrate isolation and detection of active constituents of various plants.	3	1	2	2	1	1	1	2	2
	CS08.3	Demonstrate identification, isolation and analysis of Phytoconstituents	3	1	2	2	1	1	1	2	2
	CS08.4	Demonstrate separation and detection of phytoconstituents with the help of TLC and paper chromatography	3	1	2	2	1	1	1	2	2
	CS08.5	Analyze the crude drug by chemical test	3	1	2	2	1	1	1	1	2



Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore

Course Outcome-Program Outcome

B. Pharmacy III Year / VI Sem		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
Course code	Course name											
	Course Outcome											
3P6017 Medicinal Chemistry -II	C601. 1	Outline the fundamentals of medicinal chemistry, SAR and synthesis of classical antibiotics like β -lactam antibiotics, aminoglycosides and tetracyclines	3	2	1		1			1		2
	C601. 2	Classify, and outline the medicinal chemistry, SAR and synthesis of antibiotics, chemotherapeutic agents like macrolides, anti-malarial and proteases.	3	2	1		1		2	1		3
	C601. 3	Elaborate the medicinal chemistry, SAR and synthesis of antiviral, anti-tubercular drugs and urinary tract anti-infectives.	3	2	1		1		2	1		2
	C601. 4	Explain the medicinal chemistry, SAR and synthesis of antifungal drugs, anti-helmintics, antiprotozoal and sulphonamide class of drugs.	3	2	1		1		2	1		2
	C601. 5	Explain the concepts of drug design, QSAR and combinatorial chemistry.	3	2	1		1		2	1		2
Pharmaco-logy (3P6027)	C602. 1	Explain the pharmacology of drugs acting on the Respiratory and Gastrointestinal system	3	1	2		1		1	2	1	1
	C602. 2	Explain the mechanism of drug action and its relevance in the treatment of different infectious diseases and cancer	3	1	2		1		1	2	1	1



[Signature]
Principal
Indore Institute of Pharmacy
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C602: 3	Describe the chemotherapy of anti-tubercular agents, antifungal, antiviral, antelmintics and antimetabolic agents.	3	1	2	1	1	2	1	1
	C602: 4	Describe the chemotherapy for LTL, STD and immunopharmacology.	3	1	2	1	1	2	1	1
	C602: 5	Comprehend the principles of toxicology and treatment of various types of poisoning and the concept of immunopharmacology and chronopharmacology.	3	1	2	1	1	2	1	1
Herbal Drug Technology (BP-6051)	C603: 1	Impart knowledge of herbs as raw materials, Biodynamic agriculture and the Indian System of Medicine.	3	1	2	2	1	2	2	2
	C603: 2	Outline the general market, scope, and types of products available in nutraceuticals and herb-drug-food interactions.	3	1	1	2	1	2	2	2
	C603: 3	Explain the sources of and description of herbal cosmetics, herbal excipients and herbal formulations.	3	1	1	2	1	2	1	2
	C603: 4	Analyze and develop Good manufacturing practices (GMP), patenting and regulatory aspects of herbal drugs.	3	2	1	2	1	2	1	2
	C603: 5	Outline of plant-based industries and institutions involved in work on medicinal and aromatic plants in India along with schedule-T of drugs and cosmetics act.	3	1	1	2	1	2	1	2
Biopharmaceutics and Pharmacokinetics	C604: 1	Explain the concepts of biopharmaceutics and their applications in pharmaceutical development.	3	2	2	2	1	1	1	2



Om
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

Pharmaceutical Quality Assurance (BP-607)	C604.2	Describe the kinetics of elimination. Explain the concept of bioavailability and Bioequivalence.	3	1	2	1	2	1			2		
	C604.3	Learn the use of plasma-level time data to calculate secondary pharmacokinetic parameters.	3	1	2	1	1	1			2		
	C604.4	Explain the concept of multicompartment models.	3	1	2	2	1	1			2		
	C604.5	Appraise non-linear pharmacokinetics with examples of drugs.	3	2	2	1	2	1			2		
	C605.1	Elaborate on the importance of enzymes biotechnology, Biosensors, Protein Engg, use of microbes in pharmaceutical industries	3			1	3	1	3	1	2	3	
Pharmaceutical Biotechnology (BP-605)	C605.2	Learn the use of genetic engineering techniques for the production of pharmaceuticals	3	2	2	3		1	2	1	3	2	2
	C605.3	outline the concept of Humoral Immunity and cellular immunity	3	1	2	3		2	2	1	2	2	2
	C605.4	Learn and outline the basic principles of immunology and how it is used for the production of vaccines and blood preservation techniques	3	3	2	3	1	2	1	3	2	3	2
	C605.5	Appraise the use of fermentation technology in the pharmaceutical industries	3	2	2	3	1	3	2	2	2	3	3
	Pharmaceutical Quality Assurance	C606.1	Outline the cGMP, TQM, QbD, ISO, and NABL accreditation aspects of the pharmaceutical industries	3	2	2			1	2	1		2



Principal
 Indore Institute of Pharmacy
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

(BP-606T)	C606.2	Explain the important aspects of organization and personnel, premises and equipment and raw material.	3	2	2			1	2	1			2
	C606.3	Learn and outline the basic principles guidelines issued by various regulatory agencies on quality control and GLP	3	2	2			1	2	1			2
	C606.4	Appreciate the importance of documentation in the pharmaceutical industry.	3	2	2			1	2	1			2
	C606.5	Appraise calibration and validation techniques	3	2	2			1	2	1			2
Medicinal Chemistry -III (Practical) (BP-607P)	C607.1	Design and build drugs along with their intermediates	3	2	2		2	1	2	2			2
	C607.2	Perform and understand the assay methods of some important antibiotics	3	2	2		2	1	2	2			2
	C607.3	Perform the synthesis of important intermediates and drugs using microwave irradiation methods	3	2	2	2	2	1	2	2			2
	C607.4	Learn how to use the computer programs to draw chemical structures	3	2	2	2	2	1	2	2			2
	C607.5	Learn, apply and appraise Lipinski's rule of five using computer-assisted methods	3	2	2		2	1	2	2			2
Pharmacokinetics (Practical) (BP-608P)	C608.1	Outline the concept of dose calculation in pharmacology experiments	3	2	2	1	1		1	2			2
	C608.2	Demonstrate the action of drugs on the respiratory and gastrointestinal tract using software	3	2	2	1	1		1	2			2
	C608.3	Determine acute toxicity of drugs by given data	3	2	2	1	1		1	2			2



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C608.4	Illustrate calculation of Pharmacokinetic parameters	3	2	2	1	1			2			2
	C608.5	Learn the application of biotransformation methods in experimental pharmacology	3	2	2	1	1			2			2
Herbal Drug Technology (Practical) (BP-609P)	C609.1	Perform preliminary phytochemical screening of crude drugs	3	2	2	1		2	1	2		1	3
	C609.2	Evaluate the excipients of natural origin	3	2	2	1		2	1	2		1	3
	C609.3	Perform monograph analysis of some pharmacopoeial drugs	3	2	2	2		2	1	2		1	3
	C609.4	Prepare and standardize formulations containing crude drug extracts	3	2	2	2		2	1	2		1	3
	C609.5	Analyze crude drugs for secondary metabolite content	3	2	2	2		2	1	2		1	3


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

B. Pharmacy III Year / VII Sem		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1
Course code/ Course name	Course Outcome											
(PY 701) Instrumental methods of analysis	C.701.1 Extend knowledge of the introduction, instrumentation and applications of UV Visible Spectroscopy and Fluorimetry.	3	2	2	3	2	1		2		1	3
	C.701.2 Discuss the basic fundamental aspects of quantitative & qualitative analysis of drugs using various analytical instruments like IR Spectroscopy, Flame Photometry, atomic absorption Spectroscopy and Nepheloturbidometry.	3	2	2	3	2	1		2	2		3
	C.701.3 Illustrate the principle and methodology of chromatographic separation by various techniques like Adsorption and partition column chromatography, TLC, Paper chromatography and Electrophoresis with their applications	3	2	3	3	2	1	2	2	1	1	3
	C.701.4 Demonstrate the principle, instrumentation and analysis of compounds using GC and HPLC.	3	2	3	3	2	2	1	2	1	1	3
	C.701.5 Explain the mechanism, instrumentation and applications of separation techniques i.e. Ion exchange chromatography, Gel chromatography and affinity chromatography.	3	3	3		2	1	1	2	1	1	2
(PY 702) Industrial Pharmacy II	C.702.1 Define the process of pilot plant scale-up of techniques	3	3	1		1	2	2		2		3
	C.702.2 Outline the process of technology transfer from lab scale to commercial batch.	3	3	1		1	2	2		1		3



[Signature]
 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

[Signature]
 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

3	C.702	Interpret regulatory affairs and regulatory requirements for the approval process of drug products.	3	2	1	1	2	2	2	1	3
4	C.702	Define quality management and certifications for quality like QSD, QOS, ISO, GLP etc.	3	2	1	1	2	2	2	1	3
5	C.702	Develop concepts of different Laws and Acts that regulate the pharmaceutical industry as per Indian Regulatory Requirements like CDSCO, COPP etc.	3	2	1	1	2	2	2	1	3
1	C.703	Outline the organization, layout, and roles of the hospital and hospital pharmacy and community pharmacy. Analyzing the adverse drug reactions and managing them.	3	1	1	1	2	3	1	2	3
2	C.701	Construct the concepts of drug distribution in hospitals and plan the hospital formulary. Infer the need for TDM and summarizing drug therapy of patient through medication chart review and community pharmacy management.	3	2	2	2	2	2	1	2	3
3	C.703	Construction of Pharmacy and Therapeutics Committee, Interpretation of the sources of drug information services and prescription orders. Need for patient counseling and importance of training and education program in hospital, Prescribed medication order and communication skills.	2	1	1	1	2	3	2	1	3
4	C.703	Plan of budget preparation and its implementation, inclinal pharmacy, identifying the OTC sales and Rational use of drugs.	2	1	1	1	2	3	2	3	1
5	C.703	Explain the drug store management and inventory control. Interpretation of laboratory results of specific diseases and summarizing the investigational use of drugs.	2	1	1	1	2	3	2	3	3

[Signature]
 Principal
 Indore Institute of Pharmacy,
 Indore (M.P.)



[Signature]
 Principal
 Indore Institute of Pharmacy,
 Indore (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

(PY 704T) Novel Drug Delivery System	C.704.1	Relate the principles and rationale of drug delivery with the current and future approaches to controlled drug delivery and drug targeting using Polymers	3	2	1	3	1		1			
	C.704.2	Summarize microencapsulation and fabrication of successful and implantable drug delivery system	3	2	1	3	1		1			1
	C.704.3	Demonstrate development of site-specific drug delivery like nasopulmonary, transdermal drug delivery systems, GRDDS	3	2	1	3	1		1			1
	C.704.4	Illustrate the targeted drug delivery system using liposomes, nanoparticles etc.	3	2	1	3	1		1			1
	C.704.5	Distinguish site-specific drug delivery like ocular and intrauterine drug delivery systems.	3	2	1	3	1		1			1
(PY 705P) Instrumental methods of analysis (Practical)	C.705.1	Determination of absorption maxima of various organic compounds	3	3	3	3	2	2	1	2		2
	C.705.2	Perform assay and simultaneous estimation by UV spectroscopy	3	3	3	3	2	2	1	2		2
	C.705.3	Separation of compounds by Paper chromatography and TLC	3	3	3	3	2	2	1	2		2
	C.705.4	Demonstrate the analysis of compounds using spectroscopic methods	3	3	3	3	2	2	1	2		2
	C.705.5	Demonstration of instrumentation of HPLC & Gas Chromatography	3	3	3	3	2	2	1	2		2



Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

B. Pharmacy IV Year / VIII Sem		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Course code/ Course name	Course Outcome											
(BP 801) Biostatistics and Research Methodology	C.801.1 Know the various statistical technique, measures of central tendency, measures of dispersion and correlation	3	1	3	2	1			1			2
	C.801.2 Solve regression, probability and parametric test	3	1	3	2	1			1			2
	C.801.3 Appreciate non-parametric test need for research, graph and designing methodology	3	1	3	2	1			1			2
	C.801.4 Know the operation of regression modelling and practical components of industrial and clinical trial problems	3	1	3	2	1			1			2
	C.801.5 Know design and analysis of experiment	3										
(BP 802) Social and Preventive Pharmacy	C.802.1 Know the concept of health and disease, health education, sociology, and hygiene	3	1	1	1	1		1	2	3		2
	C.802.2 Explain preventive medicines	3	1	1	1	1		1	2	3		2
	C.802.3 Outline the National health program, objective, functioning, and outcome	3	1	1	1	1		1	2	3		2
	C.802.4 Outline the National health program with reference to programs for mother and child, family welfare, tobacco control, malaria prevention, health care for elderly and the role WHO	3	1	1	1	1		1	2	3		2



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	C.802.5	Explain community services in rural, urban, and school health	3	1	1	1		1	1	2	3		2
(BP 809E) Cosmetic Science	C.809.1	Classify cosmetic and cosmeceutical products	3	1	1			1	2	2	2		2
	C.809.2	Explain principles of formulation and building blocks of skincare products, antiperspirants, deodorants, and hair care products	3	2	2			1	1	2	2		2
	C.809.3	Explain the role of herbs in cosmetic and analytical cosmetics	3	1	2			1	1	2	2		2
	C.809.4	Outline principles of cosmetic evaluations	3	2	2			1	2	2	2		2
	C.809.5	Explain problems associated with hair and skin	3	1	3			2	1	2	1		2
		C.812.1	Explain functional foods, nutraceuticals, and dietary supplements	3	1	1	1	1			1		1
(BP 812E) Dietary Supplements and Nutraceuticals	C.812.2	Appreciate the components in dietary supplements and the application	3	1	1	1	1			1		1	2
	C.812.3	Know about free radicals, its production, and reaction in the diet	3	1	1	1	1			1		1	2
	C.812.4	Outline free radicals in various diseases, antioxidants, and functional food for chronic diseases prevention	3	1	1	1	1			1		1	2
	C.812.5	appreciate the regularity and commercial aspect of dietary supplements including health claims	3	1	1	1	1			1		1	2
	(BP 805) Practice	C.805.1	outline the basics of Practices in pharmacy	3	3	3	3	3	3	3	3	3	3



[Signature]
 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

[Signature]
 Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

Semester	C.805.2	Know about E-Medicines in India	3	3	3	3	3	3	3	3	3	3
	C.805.3	Explain of Arogya and Janushasthi Scheme of drug distribution.	3	3	3	3	3	3	3	3	3	3
	C.805.4	Elaborate learning of drug distribution systems of various pharmacies.	3	3	3	3	3	3	3	3	3	3
	C.805.5	Survey and submit a detailed printed report help in the evaluation of work done.	3	3	3	3	3	3	3	3	3	3



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



**Indore Institute of
Pharmacy**

Affiliated to - B.P.H.U. (Bhopal) | Approved by - AICTE (New Delhi) & PDCHE (Pune)
Established in the year 1982

M. PHARMACY (P'Ceutics & QA)



Indore Institute of Pharmacy, Indore

M. Pharmacy (PCS & QA) PEO

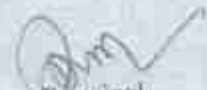
To make post-graduates working as successful and advanced practitioners of Pharmacy profession.

To make them well versed in core technical skills and knowledge with an attitude of service and commitment for social duties.

To develop the urge and inclination for output-oriented research.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore

M. Pharm. (QA)

PSO-1 - Create a talent pool that can be well versed with the application-based Importance of Emerging Quality Building Concepts as per regulatory guidelines to build up the quality in the pharmaceutical product.

PSO-2 To be competent in writing, interpreting and communicating scientifically and effectively for fulfilling the desire of quality assurance department of Pharmaceuticals

PSO-3 Empower and sensitize the quality assurance professionals to serve the pharmaceutical industry, academia and the society.



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore


M. Pharm (PCS)


PSO I - Create a talent pool that can perform research on various aspects of dosage form design and development and implement the knowledge in formulating the best suitable dosage form to provide high quality medicines to the society

PSO II - Equip the students with strong fundamental concept and high technical competence in novel drug delivery system to serve the need of R&D and Production department of pharmaceutical industry.

PSO-III Able to write, interpret and communicate effectively and scientifically to accomplish the requirements of Research and Development and regulatory department of Pharmaceuticals.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



M. Pharm. (Pharmaceutics)

PO1: An ability to independently carry out pharmaceutical research and development work to solve practical problems related to preformulation, formulation design and evaluation, novel drug delivery systems.

PO2: An ability to write and present a research report by conceptualizing research ideas, delivering effective presentations, and its documentation.

PO3: Acquire in-depth knowledge in pharmaceutics with emphasis on preformulation, formulation development and its evaluation, and new drug delivery systems including wider and global perspective, with an ability to discriminate, evaluate, analyze and synthesize existing and new knowledge, and integration of the same for enhancement of knowledge.




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



M. Pharm. (Pharmaceutical Quality Assurance)

PO1: An ability to independently carry out pharmaceutical quality assurance related research development work to solve practical problems in its professional implementation.

PO2: An ability to write and present a research report by conceptualizing research ideas.

PO3: Acquire in-depth knowledge in pharmaceutical quality assurance with special emphasis on pharmaceutical quality systems, cGMP guidelines, documentation, validation strategy, and various protocols for drug regulations including wider and global perspective, with an ability to discriminate, evaluate, analyze and synthesize existing and new knowledge, and integration of the same for enhancement of knowledge




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Course Code/Course name	Course outcomes	
MPY-101- Modern analytical techniques	MQA101.1	Understand the basic knowledge on single and multiple component assay of pharmaceuticals
	MQA101.2	Developing basic practical skills using instrumentation techniques
	MQA101.3	Skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals
	MQA101.4	Basics theoretical knowledge on various instrumental techniques available for analysis of organic substances
	MQA101.5	Applying the knowledge learnt in developing new procedures and comparing various methods of analysis
MQA-102T Quality Management System	MQA102.1	Understand the quality parameters and quality attribute in Pharmaceutical industry sectors
	MQA102.2	Learning the various tools for quality improvement
	MQA102.3	Knowing the Importance of the quality of medicines in the public.
	MQA102.4	Regulatory body requirements for the import and export pharmaceutical products
	MQA102.5	Knowledge of stability testing of drug and drug substances
MQA103T – Quality Control and Quality Assurance	MQY-103.1	Understand the cGMP aspects in a pharmaceutical industry
	MQY-103.2	Understand GLP and regulatory Affairs
	MQY-103.3	Appreciate the importance of documentation
	MQY-103.4	Understand the responsibilities of QA & QC departments
	MQY-103.5	Appreciate the importance of documentation
MQA104T – Product Development and Technology Transfer	MQA-104.1	Understand the new product development process
	MQA-104.2	Explain information to transfer technology from R&D to actual manufacturing
	MQA-104.3	Elucidate necessary information to transfer technology of existing products between various manufacturing places



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



	MQA-104.4	Understand the Quality by design practices of sterile and non sterile dosage forms
	MQA-104.5	Understand the practices of packaging technology
	MQA-104.6	Understand the Regulatory requirements in drug development stages
MQA105P – Pharmaceutical Quality Assurance Practical – I	MQA-105.1	Estimation of process capability
	MQA-105.2	In process and finished product quality control tests for tablets, capsules, parenteral and semisolid dosage forms
	MQA-105.3	Estimation of drug in pharmaceutical by using modern analytical techniques
	MQA-105.4	Development of Stability study protocol for pharmaceuticals
	MQA-105.5	To carry out preformulation study for successful formulation of pharmaceuticals
MQA201T – Hazards and Safety Management	MQA-201.1	Understand, determine and to take control measures to eliminate or minimize the level of the risks
	MQA-201.2	Support the student to recognize the control measures to eliminate or minimize the level of the risks
	MQA-201.3	Ensure safety standards in pharmaceutical industry
	MQA-201.4	Provide comprehensive knowledge on the safety management
	MQA-201.5	Teach the method of Hazard assessment, procedure, methodology for provide safe industrial atmosphere
MQA202T – Pharmaceutical Validation	MQA202.1	Importance of patent and intellectual property rights
	MQA202.2	Knowledge of qualification aspects of various instruments
	MQA202.3	Understanding of cleaning validation of equipments employed in the manufacture of pharmaceuticals




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.) 91



	MQA202.4	Theoretical and practical basis of validation of analytical method for estimation of drugs
	MQA202.5	Fundamental aspects of qualification of various equipments and instruments
MQA203T – Audits and Regulatory Compliance	MQA203.1	To understand the importance of auditing in pharmaceuticals
	MQA203.2	To understand the methodology of auditing for pharmaceutical industry
	MQA203.3	To prepare the check list for auditing
	MQA203.4	To carry out the audit process
MQA204T – Pharmaceutical Manufacturing Technology	MQA204.1	Knowledge of common practice in the pharmaceutical industry developments, plant layout and production planning
	MQA204.2	Knowledge of principles and practices of aseptic process technology, non-sterile manufacturing technology and packaging technology
	MQA204.3	Explaining principles and implementation of Quality by design (QbD) and process analytical technology (PAT) in pharmaceutical manufacturing
	MQA204.4	Understand the practices of packaging technology
	MQA204.5	Understand the practices of aseptic process technology
MQA205P – Pharmaceutical Quality Assurance Practical II	MQA205.1	Validation of an analytical method for pharmaceuticals
	MQA205.2	Qualification of Pharmaceutical Testing Equipment
	MQA205.3	Design of plant layout: Sterile and non-sterile
	MQA205.4	Case study on application of QbD
	MQA205.5	Identification & estimation of drug in pharmaceuticals & assess the impurities
MRM 301T – Research Methodology and Biostatistics	MRM301.1	Identify the overall process of designing a research study from its inception to its report.
	MRM301.2	Familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research
	MRM301.3	Identify a research problem stated in a study.
	MRM301.4	Why educational research is undertaken and the audiences that profit from research studies.



Indore Institute of Pharmacy,
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Grading

Course Code/Course name	Course outcomes	
MPY-101- Modern analytical techniques	MQA101.1	Understand the basic knowledge on single and multiple component assay of pharmaceuticals
	MQA101.2	Developing basic practical skills using instrumentation techniques
	MQA101.3	Skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals
	MQA101.4	Basics theoretical knowledge on various instrumental techniques available for analysis of organic substances
	MQA101.5	Applying the knowledge learnt in developing new procedures and comparing various methods of analysis
MQA-201 Regulatory guidelines for pharm. Quality management	MQA201.1	Understand the fundamental aspects of cGMP in pharmaceutical industry
	MQA201.2	Knowledge of the documentation and its importance in pharmaceutical industry
	MQA201.3	To be well versed with the key activities in QA and QC.
	MQA201.4	Knowledge of basics of risk based approach in quality management system
	MQA201.5	Fundamental aspects of current good laboratory practices and its importance in pharm industry
MQY-202 Pharm. Manufacturing and quality control	MQY-202.1	Basics of various manufacturing operations and its control in pharmaceutical industry.
	MQY-202.2	Fundamental of outsourcing of manufacturing and planning operations
	MQY-202.3	Knowledge of post operational activities and handling product complaint
	MQY-202.4	Well versed with various manufacturing operations and quality control aspects of sterile dosage form
	MQY-202.5	Understand the concept of sampling and inspection planning in pharmaceutical industry
MQA-203 Pharm. Validation	MQA-203.1	Knowledge of fundamental aspect and importance of validation
	MQA-203.2	Basics concepts for carrying out validation of manufacturing processes
	MQA-203.3	Well versed with applying the knowledge of validation to instruments and equipments
	MQA-203.4	Fundamentals aspects of manufacturing facilities validation like HVAC and water system etc.



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



	MQA-203.5	Understanding of cleaning validation and analytical method validation
	MQA-203.6	Knowledge of process validation and computer system validation and its regulatory requirements
MQA-204 Quality planning and analysis	MQA-204.1	Understanding of The importance of quality ISO management systems
	MQA-204.2	Well versed with the tools for quality improvement
	MQA-204.3	Basics of approaches used in control of quality and developing quality culture
	MQA-204.4	Knowing the importance of manufacturing planning for quality
	MQA-204.5	Statistical approaches for quality and its importance
	MQA-204.6	Fundamental concepts of quality assurance in pharmaceutical industry
MQA-301 Pharm. Quality system and process validation	MQA-301.1	Knowledge of quality control test for sterile and non-sterile dosage form
	MQA-301.2	Basics of quality assurance in pharmaceutical packaging operations
	MQA-301.3	Well versed with process validation in pharmaceutical industry
	MQA-301.4	Understanding of sterilization process validation
	MQA-301.5	Fundamentals of biological and biotechnological process validation
MQA-302 Pharm. Documentation and regulatory affairs	MQA302.1	Understanding of regulatory requirements of pharmaceutical documentation
	MQA302.2	Basics of documentation for pharmaceutical operations
	MQA302.3	Knowledge of documents for R&D and quality operations
	MQA302.4	Understanding of validation documents for non-sterile formulations
	MQA302.5	Well versed with ICH guidelines for pharmaceutical quality system




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)


Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

M. Pharma I Year / I Sem QA			PO1	PO2	PO3
Course code/ Course name	Course outcomes				
3MQA 101T Modern Analytical Technique	MQA101.1	Understand the basic knowledge on single and multiple component assay of pharmaceuticals	3		3
	MQA101.2	Developing basic practical skills using instrumentation techniques	3		3
	MQA101.3	Skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals	3		3
	MQA101.4	Basics theoretical knowledge on various instrumental techniques available for analysis of organic substances	3	3	2
	MQA101.5	Applying the knowledge learnt in developing new procedures and comparing various methods of analysis	3	3	2
MQA102T Quality Management System	MQA102.1	Understand the quality parameters and quality attribute in Pharmaceutical industry sectors	2		3
	MQA102.2	Learning the various tools for quality improvement	2		3
	MQA102.3	Knowing the Importance of the quality of medicines in the public.	2		3
	MQA102.4	Regulatory body requirements for the import and export pharmaceutical products	2		3
	MQA102.5	Knowledge of stability testing of drug and drug substances	2		3
MQA103T Quality Control and Quality Assurance	MQY-103.1	Understand the cGMP aspects in a pharmaceutical industry	2		3
	MQY-103.2	Understand GLP and regulatory Affairs	2		3
	MQY-103.3	Appreciate the importance of documentation	2		3



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

	MQY-103.4	Understand the responsibilities of QA & QC departments	2	3
	MQY-103.5	Appreciate the importance of documentation	2	3
MQA104T Product Development and Technology Transfer	MQA-104.1	Understand the new product development process	2	3
	MQA-104.2	Explain information to transfer technology from R&D to actual manufacturing	2	3
	MQA-104.3	Elucidate necessary information to transfer technology of existing products between various manufacturing places	2	3
	MQA-104.4	Understand the Quality by design practices of sterile and non sterile dosage forms	2	3
	MQA-104.5	Understand the practices of packaging technology	2	3
MQA105P Pharmaceutical Quality Assurance Practical-I	MQA-105.1	Estimation of process capability	2	3
	MQA-105.2	In process and finished product quality control tests for tablets, capsules, parenteral and semisolid dosage forms	2	3
	MQA-105.3	Estimation of drug in pharmaceutical by using modern analytical techniques	3	3
	MQA-105.4	Development of Stability study protocol for pharmaceuticals	3	3
	MQA-105.5	To carry out preformulation study for successful formulation of pharmaceuticals	3	3



Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Principal
 Indore Institute of Pharmacy,
 INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

M. Pharma I Year / II Sem(A)		PO1	PO2	PO3
Course code/ Course name	Course outcomes			
MQA201T Hazards and Safety Management	MQA-201.1	Understand, determine and to take control measures to eliminate or minimize the level of the risks	2	3
	MQA-201.2	Support the student to recognize the control measures to eliminate or minimize the level of the risks	2	3
	MQA-201.3	Ensure safety standards in pharmaceutical industry	2	3
	MQA-201.4	Provide comprehensive knowledge on the safety management	2	3
	MQA-201.5	Teach the method of Hazard assessment, procedure, methodology for provide safe industrial atmosphere	2	3
MQA202T Pharmaceutical Validation	MQA202.1	Importance of patent and intellectual property rights	2	3
	MQA202.2	Knowledge of qualification aspects of various instruments	2	3
	MQA202.3	Understanding of cleaning validation of equipments employed in the manufacture of pharmaceuticals	2	3
	MQA202.4	Theoretical and practical basis of validation of analytical method for estimation of drugs	2	3
	MQA202.5	Fundamental aspects of qualification of various equipments and instruments	2	3



[Signature]
Indore Institute of Pharmacy
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy, Indore
Course Outcome-Program Outcome

MQA203T Audits and Regulatory Compliance	MQA203.1	To understand the importance of auditing in pharmaceuticals	2	3
	MQA203.2	To understand the methodology of auditing for pharmaceutical industry	2	3
	MQA203.3	To prepare the check list for auditing	2	3
	MQA203.4	To carry out the audit process	2	3
MQA204T Pharmaceutical Manufacturing Technology			2	
	MQA204.1	Knowledge of common practice in the pharmaceutical industry developments, plant layout and production planning	2	3
	MQA204.2	Knowledge of principles and practices of aseptic process technology, non-sterile manufacturing technology and packaging technology	2	3
	MQA204.3	Explaining principles and implementation of Quality by design (QbD) and process analytical technology (PAT) in pharmaceutical manufacturing	2	3
	MQA204.4	Understand the practices of packaging technology	2	3
MQA205P Pharmaceutical Quality Assurance Practical-II		Validation of an analytical method for pharmaceuticals	2	3
	MQA205.2	Qualification of Pharmaceutical Testing Equipment	3	3
	MQA205.3	Design of plant layout: Sterile and non-sterile	3	3
	MQA205.4	Case study on application of QbD	3	3



Indore Institute of Pharmacy
INDORE (M.P.)

Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy Indore
Course Outcome-Program Outcome

	MQA205.5	Identification & estimation of drug in pharmaceuticals & assess the impurities	2		3
--	----------	--	---	--	---

M. Pharma II Year / III Sem (PCS & QA)			PO1	PO2	PO3
Course code/ Course name	Course outcomes				
MRM301T Research Methodology and Biostatistics	MRM301.1	Identify the overall process of designing a research study from its inception to its report.	3	3	3
	MRM301.2	Familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research	3	2	3
	MRM301.3	Identify a research problem stated in a study.	3	3	3
	MRM301.4	Why educational research is undertaken and the audiences that profit from research studies.	3	3	3



[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

[Signature]
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Course Outcomes (CO)

New Syllabus effective since 2021-2022

M. Pharm. (PCS)I Year / I Sem		
Course code/ Course name	Course outcomes	
MPH 101T Modern Pharmaceutical Analytical Techniques	MPH101.1	Understand the basic knowledge on single and multiple component assay of pharmaceuticals
	MPH101.2	Developing basic practical skills using instrumentation techniques
	MPH101.3	Skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals
	MPH101.4	Basics theoretical knowledge on various instrumental techniques available for analysis of organic substances
	MPH101.5	Applying the knowledge learnt in developing new procedures and comparing various methods of analysis
(MPH 102T) Drug Delivery System	MPH102.1	To understand the various approaches for development of sustained and controlled drug delivery systems
	MPH102.2	Demonstrate development of site-specific drug delivery like buccal patch/tablet, lozenges, osmotic tablets.
	MPH102.3	Explain the design, fabrication and release mechanism of gastroretentive dosage form.
	MPH102.4	Explain the concept of palletization technology as a modulated drug delivery system.
	MPH102.5	Outline the concept of ocular and transdermal drug delivery system.
MPH 103T Modern Pharmaceutics	MPH103.1	Understand various preformulation concepts
	MPH103.2	Understand the concept of validation w.r.t. pharmaceutics
	MPH103.3	Outline the concept of cGMP and industrial management
	MPH103.4	Explore the concept of compression and compaction of tablets
	MPH103.5	Study statistical principles and implement them for biopharmaceutical studies
MPH 104T Regulatory Affairs	MPH 104.1	Understand the concept of documentation in Pharmacy Industry
	MPH 104.2	Explore the role of regulatory affairs after drug approval
	MPH 104.3	Understand the process of IND, NDA and ANDA submission
	MPH 104.4	Study the process of clinical trials





MPH 105.P Pharmaceutical Practical-I	MPH105.1	Analysis of Pharmacopoeial compounds and their formulations by UV-Vis spectrophotometer
	MPH105.2	Explore the Experiments based on Gas Chromatography and HPLC
	MPH 105.3	Perform the Preformulation studies of tablet dosage form and to Perform In -vitro dissolution of novel drug delivery systems like controlled release or sustained release marketed formulation
	MPH 105.4	To study Micromeritic properties of powders and granulation.
	MPH105.5	To study the effect of binders on dissolution of a tablet.
M. Pharma I Year / II Sem (PHARMACEUTICS) PCI		
MPH201T Molecular Pharmaceutics (Nano Technology & Targeted DDS)	MPH201.1T	To relate the concept of targeted Drug Delivery Systems
	MPH201.2T	Development of ability to prepare and evaluate nano particles & liposomes
	MPH201.3T	To summarize the basics of preparation and application of Niosomes, Aquasomes, Phytosomes, Electrosomes
	MPH201.4T	To recall the concepts of Pulmonary Drug Delivery Systems
	MPH201.5T	Better explain the concepts of Nucleic acid based therapeutic delivery system.
MPH202T Advanced Biopharmaceutics & Pharmacokinetics	MPH202.1T	Development of ability to understand the concept of therapeutic response and toxicity, therapeutic index, therapeutic window, factors affecting plasma concentration.
	MPH202.2T	To summarize the basics of Compartment modeling including one, two and multiple compartment models and determination of various pharmacokinetic parameters.
	MPH202.3T	To relate the concept of Non-linear pharmacokinetics and recognition of non linearity, circadian rhythm and chronopharmacokinetics, other reasons for non-linearity.
	MPH202.4T	Better explain the concepts of physiologic pharmacokinetic model and to define mean time (MRT) statistical moment theory, Mean absorption time (MAT) Mean Dissolution time (MDT).
	MPH202.5T	To recall the concepts of absorption distribution and renal excretion, hepatic clearance and elimination, bioavailability and bioequivalence
MPH203T Computer Aided Drug Delivery	MPH203.1	To understand use of computer in pharmaceutical research and statistical modelling. To understand importance of quality attributes in pharmaceutical industry.



System	MPH203.2	To brief about modelling in drug disposition techniques and transport mechanism
	MPH203.3	Applications of Computers in pharmaceutical product development and factorial design.
	MPH203.4	Attain the knowledge of computer aided clinical methodologies used in biopharmaceutical studies and simulation in ADME
	MPH203.5	Upgradation of the knowledge by studying the use of automation in pharmaceutical industry and applications of artificial intelligence.
MPH 204T Cosmetics and Cosmeceuticals	MPH204.1	Understanding of basic of cosmetic products as per Indian regulation.
	MPH204.2	Define the biological aspects cosmetic in relation skin and hair structure
	MPH204.3	Attain the knowledge the formulation consideration of skin care preparations?
	MPH204.4	Summarize the cosmeceutical products and sunscreen preparations
	MPH204.5	Applications of the Herbal Cosmetics
MPH 205 P Pharmaceutical Practical-II	MPH205.1	Estimate general considerations, methods of preparation, characterization and applications of Liposomes, Niosomes, Alginate beads, albumin microspheres and spherules
	MPH205.2	Formulate and evaluate Creams, Shampoo and Toothpaste
	MPH 205.3	Perform the Bioavailability studies of Paracetamol in animals
	MPH 205.4	To explore the knowledge of DoE Using Design Expert® Software
	MPH205.5	Protein binding studies of a highly protein bound drug & poorly protein bound drug
M. Pharm. II year Semester III		
MRM 301T Research Methodology and Biostatistics	MRM301.1	Identify the overall process of designing a research study from its inception to its report.
	MRM301.2	Familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research
	MRM301.3	Identify a research problem stated in a study.
	MRM301.4	Why educational research is undertaken and the audiences that profit from research studies?



Old Scheme Course Outcomes

M. Pharma I Year / I Sem		
Course code/ Course name	Course outcomes	
MPY 101 Modern Analytical Technique	MPY101.1	Understand the basic knowledge of single and multiple component assay of pharmaceuticals
	MPY 101.2	Developing basic practical skills using instrumentation techniques
	MPY 101.3	Skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals
	MPY 101.4	Basics theoretical knowledge on various instrumental techniques available for analysis of organic substances
	MPY 101.5	Applying the knowledge learned in developing new procedures and comparing various methods of analysis
MPY 102 Biotechnology and bioinformatics	MPY102.1	Understand the Structure & Function of DNA, DNA Replication & Repair, Expression of Genetic Information, Function of RNA and translation, Post translational modification
	MPY 102.2	Concept of recombinant DNA technology knowledge of Restriction enzymes, Polymerase Chain reaction, Blotting techniques, DNA sequencing, and Pharmaceutical applications.
	MPY 102.3	Understanding the gene therapy and its pharmaceutical significance.
	MPY 102.4	Study of Manufacturing and storage of vaccines, Application of immunology for the development of new vaccines, Gaining knowledge of monoclonal antibodies & hybridoma technology & its applications.
	MPY 102.5	Study of cell organization and reproduction, Understanding the communication between cell and their environment.
	MPY102.6	Application of knowledge of cancer and its treatment strategies.
	MPY102.7	Understanding the molecular mechanism of disease and in vivo transgenic models, Genomic protein targets and recombinant therapeutics. Its application for rational drug design, Gene therapy & DNA/ RNA targeted therapeutics.
	MPY102.8	Exploration of biological data bases to study Sequence analysis, Protein structure, Genetic and physical mapping and importance in pharmaceutical research.
	MPY102.9	Learning of handling the biological data by descriptive statistics, Normal distribution, Probability distribution and Sampling plans.



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

MPY 103 Drug Regulatory Affairs, IPR and Quality assurance Techniques	MPY103.1	Understanding of regulatory requirements of pharmaceutical documentation
	MPY103.2	Basics of documentation for pharmaceutical operations
	MPY103.3	Knowledge of documents for R&D and quality operations
	MPY103.4	Understanding of validation documents for non-sterile formulations
	MPY103.5	Well versed with ICH guidelines for pharmaceutical quality system
MPY 104 Product Development and Formulation	MPY104.1	To obtain knowledge of physical, chemical, and pharmaceutical factors affecting dosage forms .
	MPY104.2	Idea of drug excipient, excipient-excipient interactions affecting formulations
	MPY104.3	Attain knowledge of solubilization and methods to enhance solubility.
	MPY104.4	To study dissolution apparatus dissolution testing of different types of dosage formulation and in-vitro and in-vivo correlation.
	MPY104.5	To update with latest tablet technology and automation in manufacturing process.
	MPY104.6	To get an insight of recent formulation strategies for parenteral and ophthalmic products.
	MPY104.7	Knowledge of pharmaceutical grade polymers and uses in formulation development.
	MPY104.8	To obtain knowledge of nutraceuticals and their usefulness in prevention of diseases.
	MPY104.9	To Obtain knowledge of different types of packages and their quality tests.
	MPY104.10	To understand importance of stability study programs for formulations and ICH guidelines for stability.
	MPY104.11	To explore application of computers in drug development process.
MPY101 Modern Analytical Techniques (Practical)	MPY101P.1	Analysis of Pharmacopoeial compounds and their formulations by UV-Vis spectrophotometer
	MPY101P.2	Explore the Experiments based on Gas Chromatography and HPLC
	MPY101P.3	Explore the instrumentation of HPTLC
MPY 102 Biotechnology & Bioinformatics (Practical)	MPY102P.1	Understand and perform the separation of subnuclear material along with its electrophoretic separation
	MPY102P.1	Explore various ELISA techniques
	MPY102P.1	Understand PCR and its applications

MPY 104 Product Development and Formulation (Practical)	MPY104P.1	Perform solubility studies with different types of BCS drug samples
	MPY104P.2	Study the physicochemical properties of different polymers and practically compare them
	MPY104P.3	Explore dissolution technique
	MPY104P.4	Study pharmaceutical packaging materials
M. Pharm. I Year Semester II		
MPY 201 Pcs Biopharmaceutics and Pharmacokinetics (Advanced Pharmaceutics - I)	MPY201.1	Development of ability to understand the concept of therapeutic response and toxicity, therapeutic index, therapeutic window, factors affecting plasma concentration.
	MPY 201.2	Summarize the basics of Compartment modeling including one, two and multiple compartment models and determination of various pharmacokinetic parameters.
	MPY 201.3	Relate the concept of Non-linear pharmacokinetics and recognition of non-linearity, circadian rhythm and chronopharmacokinetics, other reasons for non-linearity.
	MPY 201.4	Explain the concepts physiologic pharmacokinetic model and to define mean time (MRT) statistical moment theory, Mean absorption time (MAT) Mean Dissolution time (MDT).
	MPY 201.5	Recall the concepts of absorption distribution and renal excretion, hepatic clearance and elimination, bioavailability and bioequivalence
MPY 202 Pcs Novel drug Delivery System- I (Advanced Pharmaceutics - II)	MPY202.1	Obtain knowledge of basics in novel drug delivery systems
	MPY 202.2	Summarize the basic techniques of microencapsulation
	MPY 202.3	Summarize the study of Transdermal Drug Delivery System (TDDS)
	MPY 202.4	Explain the Implants and Inserts
	MPY 202.5	Possess Knowledge of Osmotically Regulated Systems
MPY 203 Pcs Novel drug Delivery System- II (Advanced Pharmaceutics - III)	MPY203.1	Summarize the molecular basis of targeted drug delivery
	MPY 203.2	Development of ability to understand the concept of liposomes, nanoparticles and niosomes in details
	MPY 203.3	Learn basic concept of resealed erythrocytes, dendrimers and multiple emulsions
	MPY 203.4	Explain and understand Aquasomes, Pharmacosomes and Transfersomes
	MPY 203.5	Explore peptides and protein drug delivery
MPY 204 Pcs Pharmaceutical Packaging Technology (Advanced Pharmaceutics - IV)	MPY 204.1	Understand the concept of pharmaceutical packaging and its function.
	MPY 204.2	Learn the importance of documentation
	MPY 204.3	Understand the scope of quality certifications applicable to pharmaceutical industries
	MPY 204.4	Understand the various quality control tests for packaging material.

	MPY 204.5	Understand the procedure of sterilization and stability of packaging material.
MPY 205 Pcs Lab Work	MPY 205.1	Estimate general considerations, methods of preparation, characterization and applications of Liposomes, Niosomes, Resealed Erythrocytes, Nanoparticles, Solid Lipid Nanoparticles, Dendrimers, Multiple emulsions and Submicron emulsion.
	MPY 205.2	Formulate and evaluate novel drug delivery systems like sustained release matrix tablets, Mucoadhesive tablets, Microencapsules and Trans dermal patches.
	MPY 205.3	Perform the Preformulation studies of tablet dosage form and to Perform In-vitro dissolution of novel drug delivery systems like controlled release or sustained release marketed formulation.
	MPY 205.4	Determine the effect of process variables and excipients on tablet dosage form.
	MPY 205.5	To conduct testing of packaging containers and closers.
M. Pharma II Year / III Sem (Pharmaceutics)		
MPY 301 PCS Elective I Modulated Release Drug Delivery System	MPY 301.1	Explain the design, fabrication and release mechanism of gastroretentive dosage form.
	MPY 301.2	Demonstrate development of site-specific drug delivery like buccal patch/tablet, lozenges, osmotic tablets.
	MPY 301.3	Illustrate the various novel patented technologies developed for various controlled and sustained/fast release oral drug delivery systems like, TIMERx, MASRx, COSRx, TheriForm, etc.
	MPY 301.4	Explain the concept of pelletization technology as a modulated drug delivery system.
	MPY 301.5	Outline the concept of dispersed and colloidal drug delivery system.
MPY 302 PCS Elective II Parenteral, Inhalation & Intranasal Drug Delivery Technology	MPY 302.1	Explain the basic concept of protein and peptide delivery system with formulation considerations?
	MPY 302.2	Demonstrate development of parenteral controlled drug depot systems.
	MPY 302.3	Illustrate the various the Parenteral implants.
	MPY 302.4	Summarize the Inhalation drug delivery systems.
	MPY 302.5	Knowing the importance of Intranasal drug delivery systems.



**Indore Institute of
Pharmacy**





Approved by - AICTE (India) & PDCI (India)
Approved by - UGC (India)

DISSEMINATION OF COs, POs, PSOs, PEO



Indore Institute of Pharmacy

Approved by - BOP (Drugs) (Approved by - BOP (Drugs) (M.P.) & P.D. (Drugs) (M.P.)
Approved by - BOP (Drugs) (M.P.)

 <p>Indore Institute of Pharmacy</p> <h3>M.Pharm (Pharmaceutics)</h3> <p>PROGRAMME EDUCATIONAL OBJECTIVES</p> <ul style="list-style-type: none"> To make post graduate working as successful and advanced pharmaceutical pharmacist. To make them well versed in some technical skills and knowledge with statistical analysis and computerized formulae. To develop the skill and confidence for various related research. <p>PROGRAMME SPECIFIC OUTCOMES</p> <p>PEO 1 - Create a formic acid that can perform control the various aspects of design, formulation, design and development and engineer the knowledge of formulating the semi-solid dosage forms to provide high quality medicines to the society.</p> <p>PEO 2 - Equip the students with strong fundamental concept and high technical competence in oral drug delivery system to meet the need of R&D and Production departments of pharmaceutical industry.</p> <p>PEO 3 - Students write, interpret and communicate effectively and ethically to accomplish the requirements of research and development and regulatory department of pharmaceuticals.</p>	 <p>Indore Institute of Pharmacy</p> <h3>M.Pharm (Pharmaceutics)</h3> <p>PROGRAMME OUTCOMES</p> <p>PEO 1 - Develop independently critical pharmaceutical research and development work to solve practical problems, design, formulate, control, evaluate and evaluate, control and improve quality.</p> <p>PEO 2 - Apply the skills to work and present a research report to community, national level, publishing abstracts, presentations, and publications.</p> <p>PEO 3 - Apply in depth knowledge in pharmaceutical with emphasis on pharmaceutical formulation, development and production and use drug delivery systems including solid and liquid formulations, with an ability to formulate, evaluate, control and improve quality and use knowledge of drug delivery systems for commercial advantage.</p>
<p style="text-align: right;"> GPS Map Camera</p> <div style="display: flex; align-items: center;">  <div> <p>Indore, Madhya Pradesh, India JQJH+VV6, Indore, Madhya Pradesh 453332, India Lat 22.632188° Long 75.779669° 21/12/23 10:20 AM GMT +05:30</p> </div> </div>	

Displayed M. Pharmacy (PO, PEO and PSO) on Second floor



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy

Approved by - BOP (Bharatiya) (Approved by - BOP (Bharatiya) & Pharmacy Council, India) - Under UGC Act 1956



Displayed Vision and Mission on Ground floor



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy

Approved by - BPT/2019/2020 | Approved by - MCI/2019/2020 & PCI/2019/2020
Registration - Indore-1982-2021



Displayed Vission and Mission on first floor

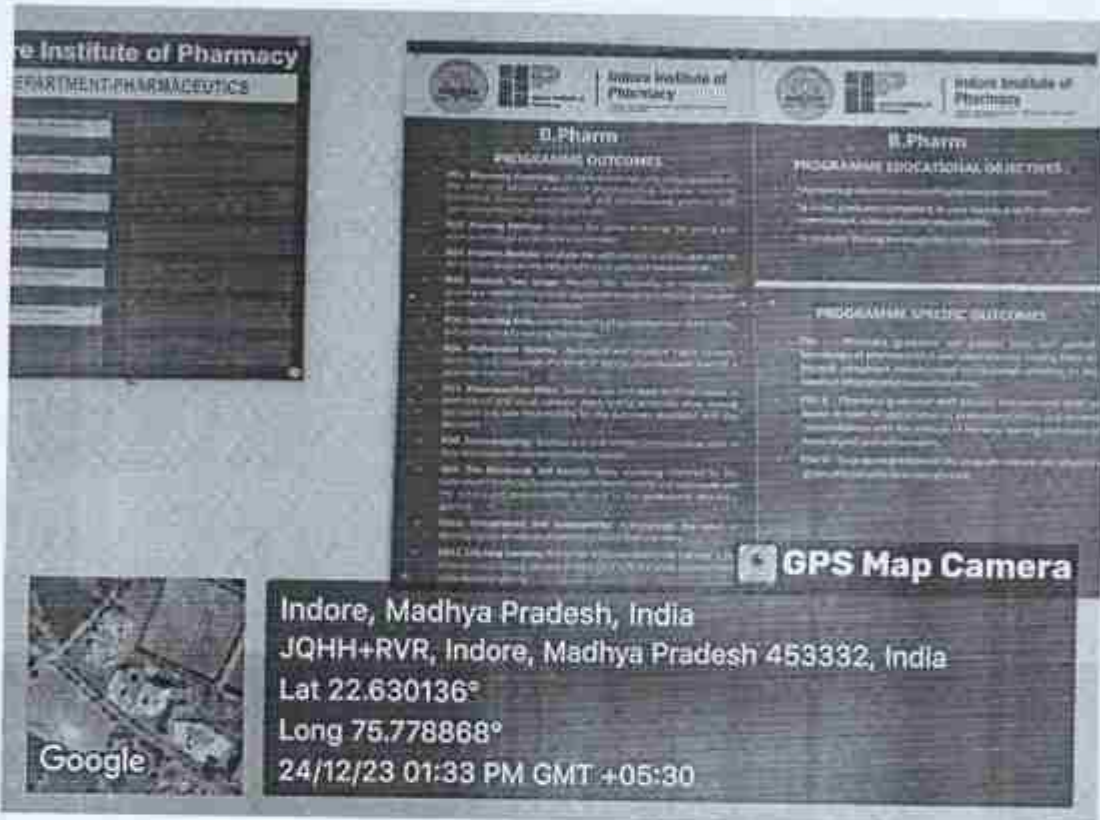



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Indore Institute of Pharmacy

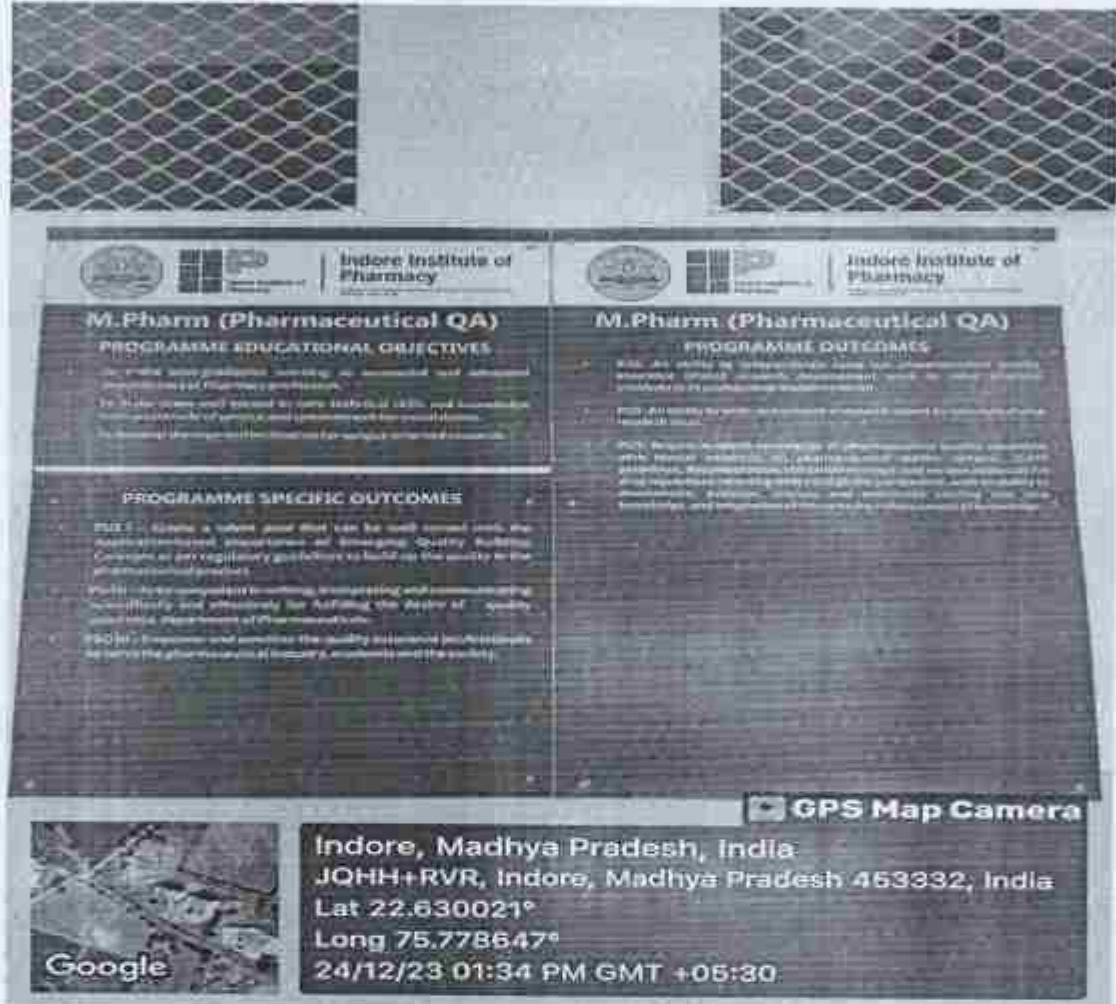
2023-2024 (A) - 2023 (B) (Approved) | Department of Pharmacy | Indore Institute of Pharmacy | Indore (M.P.) | India | 453332



Displayed B. Pharmacy (PO, PEO and PSO) on Second floor



Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



Displayed M. Pharmacy (PO, PEO and PSO) on Third floor



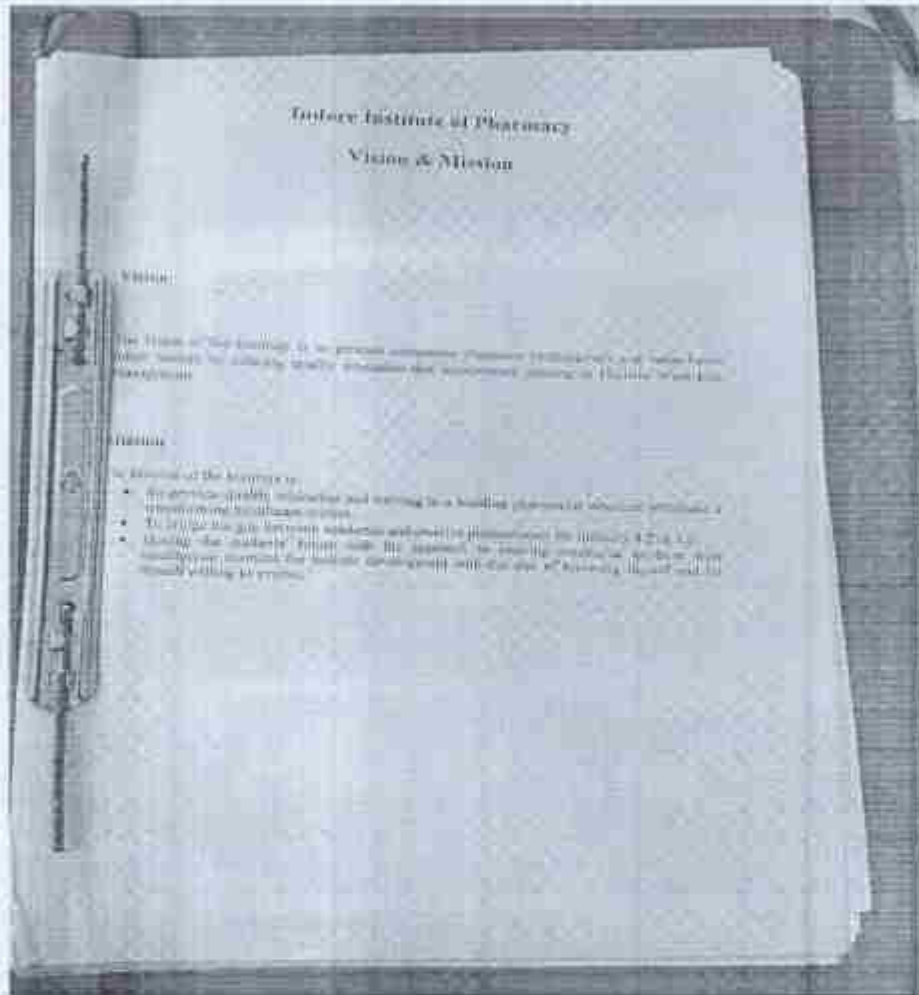
R
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



**Indore Institute of
Pharmacy**

Approved by - PCI (Pharmacy) (Approved by - PCI (Pharmacy) & PCI (Pharmacy)
Regulation - October 2014, 2015

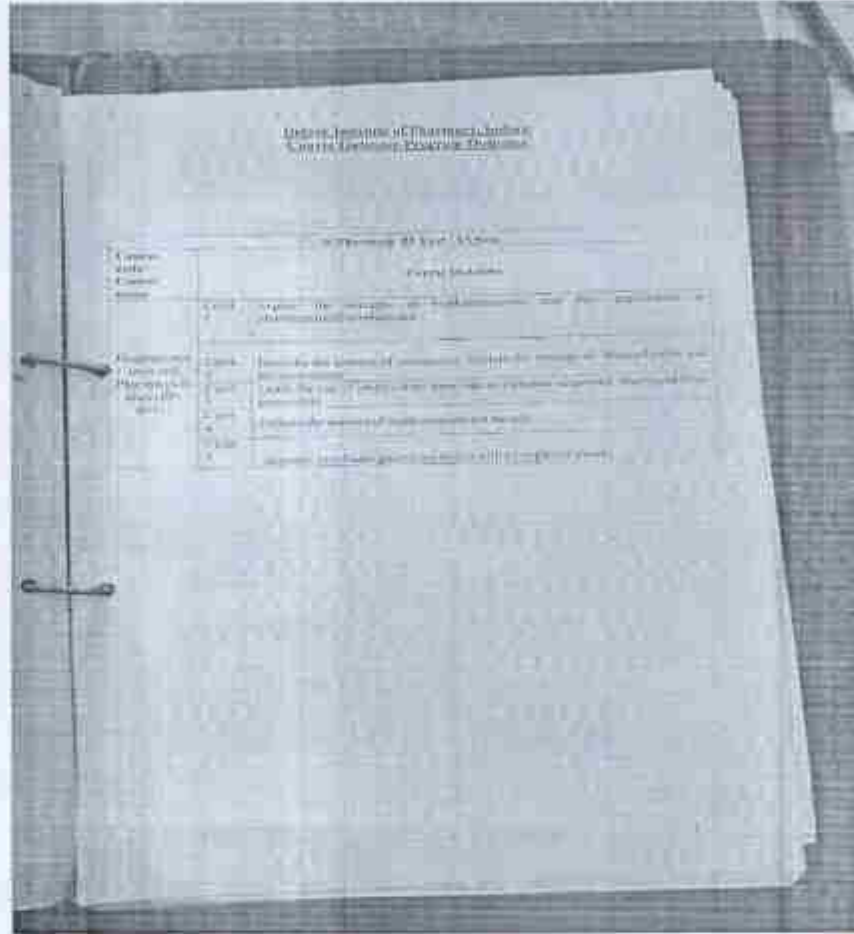
DISSEMINATION OF COURSE FILE



VISION AND MISSION



P
Principal
Indore Institute of Pharmacy,
INDORE (M.P.)



COURSE OUTCOMES




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
M.P. India

PEO

- To prepare graduates who possess the following professionally
- To make graduates sensitive to their technical skills who exhibit commitment, drive and social responsibility
- To maintain lifelong learning habits for highly productive career

PSO

- PSO I - Pharmacy graduates will possess firm and useful knowledge of pharmaceutical and allied subjects to play their role in various capacities (primary, secondary and tertiary) along with the norms of effective pharmaceutical care
- PSO II - Pharmacy graduates will possess employment skills as basic as well as a graduate of professional education and health care institutions with the attitude of lifelong learning and career advancement will be visible
- PSO III - To prepare graduates of the emerging sectors and adopt as a global citizen ready to develop world

PEO & PSO




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)

Indore Institute of Pharmacy, Indore
Course Outcome - Program Outcome

Course Title/ Course Area	Course Outcome	6. Pharmacy (B) Year: (3) Sem																			
		1	2	3	4	5	6	7	8	9	10										
Supplemental course on Pharmaceutical Marketing (MKT)	CO1: Explain the concept of pharmaceuticals and its classification in pharmaceuticals developed	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	CO2: Discuss the process of formulation, factors in selection of excipients and formulation	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	CO3: Learn the use of pharmaceuticals and how to evaluate products - pharmaceutical products	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	CO4: Explain the selection of, endoparasitic drugs.	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	CO5: Antiparasitic drugs - (Pharmacology, with evaluation of drugs)	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

CO-PO MAPPING




Principal
Indore Institute of Pharmacy,
INDORE (M.P.)