



## Year - Second

S. No	Course code	Course Title	Type of Paper	Period			Evaluation Scheme		Sub. Total	Credit	Total Credits	Attributes						
				Per hr/week/sem			Sessional Exam	Annual Exam				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics
				L	T	P												
<b>THEORIES</b>																		
1	PRY201	Pathophysiology	CORE	3	1	0	30	70	100	4	4	√	√			√	√	√
2	PRY202	Pharmaceutical Microbiology	CORE	3	1	0	30	70	100	4	4	√	√	√			√	√
3	PRY204	Pharmacognosy & Phytopharmaceuticals	CORE	3	1	0	30	70	100	4	4					√	√	√
4	PRY206	Pharmacology – I	CORE	3	1	0	30	70	100	4	4	√		√	√	√	√	√
5	PRY207	Community Pharmacy	CORE	2	1	0	30	70	100	3	3	√	√	√		√	√	√
<b>PRACTICAL</b>																		
1	PRY203	Pharmaceutical Microbiology	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√				√
2	PRY205	Pharmacognosy & Phytopharmaceuticals	CORE	0	0	3	30	70	100	1.5	1.5					√	√	√
<b>Total</b>						<b>6</b>				<b>3</b>	<b>3</b>							

## Year : Third

S. No.	Course code	Course Title	Type of Paper	Period			Evaluation Scheme		Sub. Total	Credit	Total Credits	Attributes						
				Per hr/week/sem			Sessional Exam	Annual Exam				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics
				L	T	P												
<b>THEORIES</b>																		
1	PRY301	Pharmacology – II	CORE	3	1	0	30	70	100	4	4	√	√				√	√
2	PRY303	Pharmaceutical Analysis	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
3	PRY305	Pharmaceutical Jurisprudence	CORE	2	1	0	30	70	100	3	3					√	√	√
4	PRY306	Medicinal Chemistry	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	
5	PRY308	Pharmaceutical Formulations	CORE	2	1	0	30	70	100	3	3	√	√	√	√	√		√
6	PRY 310	Biopharmaceutics & Pharmacokinetics	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
<b>PRACTICAL</b>																		
1	PRY302	Pharmacology - II	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
2	PRY304	Pharmaceutical Analysis	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
3	PRY307	Medicinal Chemistry	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	
4	PRY309	Pharmaceutical Formulations	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√		√
5	PRY 311	Biopharmaceutics & Pharmacokinetics	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√		√
<b>Total</b>						<b>15</b>				<b>7.5</b>	<b>7.5</b>							

## Year : Fourth

S. No	Course code	Course Title	Type of Paper	Period			Evaluation Scheme		Sub. Total	Credit	Total Credits	Attributes						
				Per hr/week/sem			Sessional Exam	Annual Exam				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics
				L	T	P												
<b>THEORIES</b>																		
1	PRY401	Pharmacotherapeutics I	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
2	PRY403	Pharmacotherapeutics- II	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
3	PRY405	Hospital Pharmacy	CORE	2	1	0	30	70	100	3	4	√	√	√	√	√	√	√
4	PRY407	Clinical Pharmacy	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
5	PRY409	Biostatistics & Research Methodology	CORE	2	1	0	30	70	100	3	3	√	√	√	√	√	√	√
6	PRY 410	Clinical Toxicology	CORE	2	1	0	30	70	100	3	3	√	√	√	√	√	√	√
<b>PRACTICAL</b>																		
1	PRY402	Pharmacotherapeutics I	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
2	PRY404	Pharmacotherapeutics- II	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
3	PRY406	Hospital Pharmacy	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
4	PRY408	Clinical Pharmacy	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
<b>Total</b>						<b>12</b>				<b>6</b>	<b>6</b>							

## Year - Fifth

S. No.	Course code	Course Title	Type of Paper	Period			Evaluation Scheme		Sub. Total	Credit	Total Credits	Attributes						
				Per hr/week/sem			Sessional Exam	Annual Exam				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics
				L	T	P												
<b>THEORIES</b>																		
1	PRY501	Clinical Research	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
2	PRY502	Pharmcoepidemiology and Pharmacoeconomics	CORE	3	1	0	30	70	100	4	4	√	√	√		√	√	√
3	PRY503	Clinical Pharmacokinetics & Pharmacotherapeutics Drug Monitoring	CORE	2	1	0	30	70	100	3	3	√		√				√
4	PRY 504	Pharmacotherapeutics-III	CORE	3	1	0	30	70	100	4	4	√	√	√	√	√	√	√
<b>PRACTICAL</b>																		
1	PRY505	Pharmacotherapeutics III	CORE	0	0	3	30	70	100	1.5	1.5	√	√	√	√	√	√	√
2	PRY506	Clerkship*	CORE	0	0	As per norm.	30	70	100			√	√	√	√	√	√	√
3	PRY507	Project Work (6 months)	CORE	0	0	20	30	70	100	10	10	√	√	√			√	√
<b>Total</b>						<b>23</b>				<b>11.5</b>	<b>11.5</b>							

# CO-PO MAPPING

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : FIRST																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY 107	Pharmaceutical Organic Chemistry	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Demonstrate the methods of preparation, physical properties, reactivity, stability and orbital picture of organic compounds		3	3	1	1	0	0	2	1	0	2	1	0	2	1			
CO2	Explain the aromaticity, Resonance, stability, orbital structure, mechanism of addition and nomenclature of organic compounds		3	3	2	2	0	0	2	2	0	2	2	0	2	1			
CO3	Explain the nucleophilic [alkyl/ acyl/ aryl] /substitution, elimination, with mechanism, orientation of the reaction, order of reactivity, kinetics, stability of compounds, stereochemistry and rearrangements		3	3	1	1	0	0	2	2	0	3	1						
CO4	Understand the electrophilic and free radical addition, cycloaddition reactions		2	3	1	1	0	0	2	2	0	2	1						
CO5	Understand the electrophilic aromatic substitution and Nucleophilic addition reactions		3	2	1	1	0	0	1	2	0	2	1						
CO6	Demonstrate the Methods of preparation, test for purity, principle involved in the assay, important medicinal uses of some important organic compounds and Nucleophilic acyl substitution reactions		3	3	3	2	0	0	1	2	0	2	1						



FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																		
CO-PO MAPPING																		
PHARM. D. YEAR : FIRST YEAR																		
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO									
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PRY	PMT113	MEDICAL TERMINOLOGY	1	1	0	0	15	35	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO1	Correctly identify the roles of the four types of word parts in forming medical terms.							2	1	2	2	1	2	1	1	2	2	
CO2	Define anatomy and physiology and use anatomic reference systems to identify the anatomic position for all major organ systems.							2	2	1	2	1	1	2	1	1	1	
CO3	Use basic prefixes, suffixes, and combining forms to build medical terms							2	1	2	1	2	1	2	1	1	1	
CO4	Explain the rules for proper pronunciation and spelling							3	2	1	2	2	1	1	1	1	2	
CO5	Explain the different medical concepts related to ailments and diseases in correct English							2	1	2	1	2	2	1	2	2	1	

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : First Year																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY103	Pharmaceutics	2	1	0	3	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Have information on the formulation aspect of different dosage forms							0	0	1	1	0	0	0	1	0	0	0	
CO2	Perform different pharmaceutical calculations involved in formulations							0	0	0	1	0	1	0	0	0	0	0	
CO3	Formulate different types of dosage forms							0	0	1	0	0	0	0	0	0	0		
CO4	Appreciate the importance of good formulations for effectiveness							0	1	1	1	0	1	1	1	0	1	1	
CO5	Understand prescription and take necessary steps							1	1	0	2	2	1	0	0	1	2	1	

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : I Year																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY109	Pharmaceutical inorganic Chemistry	2	1	0	3	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	To understand different sources of impurities & to develop ideas with the fundamentals of analytical chemistry								2	0	0	0	0	0	1	1	1	1	2
CO2	Clarify need and basic principle and applications of different titrations.								2	0	0	0	0	0	1	1	1	0	2
CO3	Well acquainted with the principles of limit test and important inorganic compounds of antidotes, respiratory stimulants & medicinal gases.								2	1	0	0	0	0	1	1	1	0	2
CO4	Understand the medicinal and pharmaceutical importance of inorganic compounds of acidifiers and antacids.								2	1	2	1	1	1	1	2	1	1	2
CO5	Familiar with the different classes of inorganic pharmaceutical compounds and their analysis.								2	1	2	1	1	1	1	2	1	1	2
CO6	To highlight domain of radiopharmaceuticals used in diagnostics and therapy & to describe typical therapeutic classes of inorganic compounds.								2	1	2	0	1	1	1	2	1	1	2

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : FIRST YEAR																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	
PRY	PRY111	REMEDIAL BIOLOGY	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	
CO1	Students will be able to learn about basic concept/ Knowledge of animal cell and cell organelles'								2	1	2	1	1	2	1	1	1	1	
CO2	Students will be able to learn about basic concept/ Knowledge of animal tissue and their types.								2	2	1	2	1	1	2	1	1	1	
CO3	Students will be able to learn about internal morphology (Anatomy and Physiology) of frog which can correlate with human anatomy and physiology								2	1	1	1	2	1	1	1	1	1	
CO4	Students will be able to learn about Animal Kingdom and Taxonomy.								3	1	1	2	2	1	1	1	1	1	
CO5	Students will be able to learn about Morphology of plant, Root, Stem, Leaf and its modification								2	1	2	1	1	1	1	2	1	1	

**FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.**

**CO-PO MAPPING**

**PHARM. D.      YEAR : IInd**

COURSE E C A T E G O R Y	CODE	SUBJECT	PERIODS				EVALUATION		PO												
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11		
<b>PRY</b>	<b>PRY201</b>	<b>Pathophysiology</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>30</b>	<b>70</b>													
<b>CO1</b>	Understand details of cell Injury, learn about different types of glucose related disease Grasp the details about cause and pathogenesis of inflammation. Learn about wound healing process							3	1	1	0	0	1	0	0	0	0	0	0	1	
<b>CO2</b>	Learn about hypersensitivity, autoimmune mechanism, Grasp the knowledge about AIDS and Amyloidosis. Understand the differences and properties of T & B Cells. Gain knowledge about immune tolerance							3	1	1	0	0	1	0	0	0	0	0	0	1	
<b>CO3</b>	Gain knowledge about the tumor, cancer, the pattern of spread, invasion, and metastasis. Learn about the etiology and pathogenesis of cancer.							3	1	1	0	0	1	0	0	0	0	0	0	1	
<b>CO4</b>	Gain knowledge about types and management of shock. Understand the biological effects of radiation. Learn about different types of pollutions. Gain information about different types of vitamins, obesity, malnutrition etc.							3	1	1	0	0	1	0	0	0	0	0	0	1	
<b>CO5</b>	Learn the pathophysiology of some common diseases, Understand the mechanism behind the disease							3	1	1	0	0	1	0	0	0	0	0	0	1	
<b>CO6</b>	Learn the pathophysiology of some common infectious diseases. Understand the mechanism of common infectious disease							3	1	1	0	0	1	0	0	0	0	0	0	1	

**FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.**

**CO-PO MAPPING**

**PHARM. D.                      YEAR : II Year**

COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO													
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11			
<b>PRY</b>	<b>PRY 202</b>	<b>Pharmaceutical Microbiology</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>30</b>	<b>70</b>														
<b>CO1</b>	To know the history and major divisions of microbes & about nutritional requirement for cultivation of microbes.						1	2	1	9	0	1	1	1	1	1	1	1	1	1	1	1
<b>CO2</b>	Students can able to know isolation, identification of microbes by different staining techniques.						2	2	2	1	0	1	2	2	1	1	1	1	1	1	2	2
<b>CO3</b>	Knowledge, application, testing and validation of sterilization in pharmaceutical preparation and evaluation of preservatives in pharmaceutical preparations.						2	2	1	1	0	1	1	1	1	1	1	1	1	1	2	2
<b>CO4</b>	Demonstrate an understanding of key concepts in immunology, immunization program and importance of booster dose and role of bacterial toxins.						1	2	2	1	1	1	1	1	2	1	1	1	1	2	2	2
<b>CO5</b>	Knowledge on the principles of biochemical tests and Principles and methods of different microbiological assays of antibiotics and vitamins.						2	3	2	1	1	1	1	2	1	1	1	1	1	2	2	2
<b>CO6</b>	Students can able to understanding of various infections (microbial causes, pathogenesis, and transmission of infection, diagnosis, prevention and treatment.						2	3	2	0	1	1	1	2	1	1	2	1	2	2	3	3

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : Second																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY204	Pharmacognosy and Phytopharmaceuticals	3	1	0	3	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Gain knowledge on biological source, active constituents and uses of crude drugs.								3	2	2	1	1	0	0	0	1	3	3
	Different methods of adulteration of crude drugs.								3	0	2	2	2	3	3	0	2	0	3
CO2	Understand the basic principles of cultivation, collection and storage of crude drugs.								3	0	2	2	0	0	1	0	2	2	2
	Application of the crop improvement concepts for improvement of quality of medicinal plants								3	1	2	2	0	3	2	0	2	0	3
CO3	Understand the techniques of evaluation of crude drugs as per the WHO guidelines								3	2	2	3	0	3	2	0	2	0	2
CO4	Appreciate the applications of Primary metabolites of the plant and explore its medicinal importance based on its chemical class								2	0	3	2	1	0	0	0	0	0	2
CO5	Understand and explore the pharmaceutical applications of Primary metabolites								3	0	2	1	1	0	0	0	1	2	2
CO6	Understand and explore the utilization of plants fibers in surgical dressings and related products.								3	1	2	0	0	1	0	0	0	2	2

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR :II																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY206	PHARMACOLOGY-I	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Conceptual knowledge of pharmacology basics								3	3	3	1	3	3	2	0	2	0	3
CO2	Precise knowledge about pharmacological aspects of drugs mentioned under different categories of syllabus.								3	3	3	2	3	3	1	0	2	0	3
CO3	Application of acquired knowledge to the basics of therapeutics								3	3	3	2	3	3	1	0	2	0	2
CO4	Clinical correlation of different drugs								3	3	3	3	3	3	1	0	3	1	2
CO5	Knowledge of Preclinical and Clinical studies								3	2	2	2	2	3	1	0	1	0	3

**FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.**

**CO-PO MAPPING**

**PHARM. D.                      YEAR : 2nd**

COURSE CATEGO RY	CODE	SUBJECT	PERIODS				EVALUATION		PO													
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11			
<b>PRY</b>	<b>PRY207</b>	<b>Community Pharmacy</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>30</b>	<b>70</b>														
<b>CO1</b>	Student shall be able to know pharmaceutical care services.							3	3	1	2	2	1	1	3	1	1	1				
<b>CO2</b>	Student shall be able to know the business and professional practice management skills in community pharmacies.							1	1	3	1	2	1	1	1	1	1	3	2			
<b>CO3</b>	Student shall be able to do patient counselling & provide health screening services to public in community pharmacy							1	3	3	1	1	1	1	1	1	1	1				
<b>CO4</b>	Student shall be able to respond to minor ailments and provide appropriate medication.							1	1	1	1	1	2	1	2	3	1	3				
<b>CO5</b>	Student shall be able to show empathy and sympathy to patients							1	1	1	1	2	2	1	1	1	3	1				
<b>CO6</b>	Student shall be able to appreciate the concept of Rational drug therapy.							2	3	2	2	1	3	3	2	1	1	1				

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM.D YEAR : 3																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY301	Pharmacology-II	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Able to understand MOA, drug interaction and uses of blood forming agents on various blood related disorder.							3	3	3	1	2	3	2	3	1			3
CO2	Explain the pharmacological aspects of drugs falling under Diuretics and classify them according to their application							3	3	3	2	2	3	2	3	1			3
CO3	Analyze the importance and suitability of Antimicrobials /Anticancer drugs in clinical application for better pharmacotherapeutics.							3	3	3	1	1	3	2	3	1			3
CO4	Correlate and apply the knowledge of Immunomodulators therapeutically, they can explain about the importance of toxicity studies behind drug discovery.							3	3	3	2	1	2	2	3	1	1		3
CO5	Demonstrate about the genome structure , organization and their practical implication in developing new therapeutic strategies like Gene therapy, cloning.							3	3	3	3	2	2	2	3			1	3

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : III																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY303	Pharmaceutical Analysis	3	0	0	3	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Investigate the fundamentals of quality assurance.							3	3	3	3	2	2	3	3	2	2	2	2
CO2	Apprehend the analysis of pharmaceutical substances by chromatographic techniques and electrophoresis.							3	3	3	3	2	2	3	3	2	2	2	
CO3	Recognize the principle, instrumentation and applications of gas chromatography, HPLC, affinity chromatography and electrophoresis.							3	3	3	3	2	2	3	3	2	2	2	
CO4	Analyze the essentials of electrometric methods.							3	3	3	3	2	2	3	3	2	2	2	
CO5	Explore the pharmaceutical substances by absorption and emission techniques.							3	3	3	3	2	2	3	3	2	2	2	
CO6	Deal with the fundamentals of NMR, ESR, mass spectroscopy, polarimetry, X ray diffraction and thermal techniques.							3	3	3	3	2	2	3	3	2	2	2	

**FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.**

**CO-PO MAPPING**

**PHARM D. YEAR: IIIrd Year**

COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO												
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11		
<b>PRY</b>	<b>PRY305</b>	<b>Pharmaceutical Jurisprudence</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>30</b>	<b>70</b>													
<b>CO1</b>	Know and understand the history of pharmacy profession, scope, objective, new drug policy of pharmaceutical legislation. Learn principles and significance of code of pharmaceutical ethics drafted by PCI.							3	1	1	0	0	1	3	0	0	0	0	1		
<b>CO2</b>	Know and understand the rules and regulations framed and amendments made under drugs and cosmetics act, 1940. Know about duties and qualification of drug inspector and government analyst. Understand the retail and wholesale of medicines. Learn about different schedules.							3	1	1	0	0	1	3	0	0	0	1			
<b>CO3</b>	Know and understand the rules and regulations framed and amendments made under pharmacy act 1948. Learn about the registration procedure of pharmacist. Understand the functioning of central and state PCI. Understand the rules and regulations framed and amendments made under drug and magic remedies, Advertisements which are allowed and banned in India related to pharmacy.							3	1	1	0	0	1	3	0	0	0	1			
<b>CO4</b>	Understand the rules and regulations framed and amendments made under drug and magic remedies, Advertisements which are allowed and banned in India related to pharmacy. Learn about opium cultivation. Learn about penalties of violating narcotic drugs and psychotropic substances act.							3	1	1	0	0	1	3	0	0	0	1			
<b>CO5</b>	Know and understand the product available in essential commodities list. Know about procedure for calculation of retail and wholesale of drugs. Understand the act which comes under the cruelty of animals. Learn about different penalties and fine for violating these acts.							3	1	1	0	0	1	3	0	0	0	1			
<b>CO6</b>	Know and understand the rules, regulations and process for filing a patent. Know about different types of patent. Understand the various aspects of patent act. Learn about different prescription and non-prescription products.							3	1	1	0	0	1	3	0	0	0	1			



FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : THIRD																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY310	Biopharmaceutics & pharmacokinetics	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Explain basic concepts of biopharmaceutics and pharmacokinetics.								3	0	0	0	3	3	1	2	1	2	2
CO2	Calculate Pharmacokinetic parameters from the given data.								1	3	3	3	3	2	2	2	2	2	3
CO3	Apply principles of pharmacokinetics in the design of new formulations.								1	2	3	3	3	3	3	2	2	2	3
CO4	Conduct bioavailability and bioequivalence studies.								2	2	3	3	3	3	3	2	2	2	3

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : 4th																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY 401	PHARMACOTHERAPEUTICS 1	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	To understand Pharmacotherapeutics & students may also impart knowledge and skills for contribution to quality & use of medicines								3	2	3	2	2	2	3	2	2	2	3
CO2	To apply the knowledge of path physiology and therapeutics of various diseases. And understood the of common diseases and their management.								3	2	2	2	3	2	3	2	2	3	3
CO3	To understand the pathophysiology of selected disease, rationale for drug therapy, and therapeutic approach to management of these diseases.								3	3	3	2	2	2	3	3	3	3	2
CO4	To understand the controversies in drug therapy and individualized therapeutic plans based on diagnosis.								3	3	3	2	2	2	2	2	3	3	2
CO5	To analyzed the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).								2	3	2	2	3	3	3	2	3	2	3

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : 4 <sup>th</sup>																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY403	Pharmacotherapeutics-II	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Students analyze the Pharmacotherapy of infectious disease states and explain the rationale for drug therapy and management/controversies.							3	3	2	2	2	2	1	1	1	1	1	2
CO2	Students understand the Pharmacotherapy of musculoskeletal disease and explain the rationale for drug therapy and management/controversies.							3	3	2	2	2	2	1	1	1	1	1	2
CO3	Students able to know the Pharmacotherapy of renal disease and explain the rationale for drug therapy and management/controversies.							3	3	2	2	2	2	1	1	1	1	1	2
CO4	Students have ability to explore the Pharmacotherapy of cancer and explain the rationale for drug therapy and management/controversies.							3	3	2	2	2	2	1	1	1	1	1	2
CO5	Students have ability to effectively communicate the Pharmacotherapy of skin disease and explain the rationale for drug therapy and management/controversies.							3	3	2	2	2	2	1	1	1	1	1	2

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : 4 <sup>th</sup>																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY405	Hospital Pharmacy	2	1	0	3	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Know various drug distribution methods							3	2	2	3	3	3	3	3	2	2	2	
CO2	Know the professional practice management skills in hospital pharmacies							3	3	3	3	3	3	3	3	3	3	3	
CO3	Provide unbiased drug information to the doctors							3	3	3	3	3	3	3	2	2	3	3	
CO4	Know the manufacturing practices of various formulations in hospital set up							3	2	2	3	1	3	2	3	2	3	3	
CO5	Appreciate the stores management and inventory control including practice based research methods							3	3	3	2	3	2	2	3	2	3	3	



FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																		
CO-PO MAPPING																		
PHARM. D. YEAR : 4TH YEAR																		
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO									
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PRY	PRY410	CLINICAL TOXICOLOGY	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO1	Developing general working knowledge of the principles and practice of clinical toxicology							3	2	2	3	3	2	3	2	2	3	
CO2	Demonstrating an understanding of the health implications of toxic exposures and commonly involved chemicals for toxicity							3	2	3	2	2	3	2	2	2	2	
CO3	Demonstrating and applying an understanding of general toxicology principles and clinical management practice							3	2	2	3	2	3	2	3	3	3	
CO4	Demonstrating and applying an understanding of the history, assessment, and therapy considerations associated with the management of a toxic exposure							3	2	3	2	2	3	2	2	3	3	
CO5	Demonstrating and apply an understanding of the characteristics of and treatment guidelines for specific toxic substances							3	2	3	3	3	2	2	3	3	2	

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : 5 <sup>th</sup>																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY501	Clinical Research	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Student understands the possibly effective treatments or medicine available only to those participating in the trial.							3	2	2	2	2	1	2	2	1	1	2	
CO2	Student analyzed and focused the health care for a particular disease or health condition.							3	2	2	2	2	1	2	2	1	2	2	
CO3	Student understands the society and other people with your disease or health condition by contributing to medical research.							3	2	2	2	2	1	2	2	1	2	2	
CO4	Student creates new treatment for a disease before it is available to everyone. And play a more active role in your own health care.							3	2	2	2	2	1	2	2	1	2	2	
CO5	Student understands and provides the better treatment for their health problems in the future. And information about support groups and resources.							3	2	2	2	2	1	2	2	1	2	2	

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																		
CO-PO MAPPING																		
PHARM. D. YEAR : FIFTH YEAR																		
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO									
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PRY	PRY502	PHARMACOEPIDEMOLOGY & PHARMACOECONOMICS	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO1	Students can understand and answering the demanding questions asked of pharmacotherapy in pharmacoepidemiology and pharmacoconomics.							3	2	2	3	3	2	3	2	2	3	
CO2	Pharmacoepidemiology can help assess patterns and appropriateness of drug utilisation, provide explanations for poor compliance, quantify the frequency and severity of side effects, and aid in the design and evaluation of interventions to improve drug use and outcomes.							3	2	3	2	2	3	2	2	2	2	
CO3	Pharmacoconomics can help determine whether a new costlier product offers sufficient clinical advantage over its predecessors to justify the increased cost.							3	2	2	3	2	3	2	3	3	3	
CO4	Pharmacoepidemiology and pharmacoconomics represent the next logical step in the evolution of medication assessment; their judicious deployment can help ensure both access to new medicines and innovation.							3	2	3	2	2	3	2	2	3	3	
CO5	Identify the applications of pharmacoepidemiology and pharmacoconomics in clinical settings.							3	2	3	3	3	2	2	3	3	2	

FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.																			
CO-PO MAPPING																			
PHARM. D. YEAR : Fifth Year																			
COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO										
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
PRY	PRY503	Clinical Pharmacokinetics and Therapeutic Drug Monitoring	3	1	0	4	30	70	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO1	Understand the basics of pharmacokinetic parameters and their application							1	1	0	0	1	0	0	2	1	1	1	
CO2	Develop nomograms for elderly and pediatric patients for effective therapy							2	1	1	2	2	0	1	2	1	1	2	
CO3	Know dosage adjustments in different diseases							2	0	0	3	2	0	2	2	2	1	2	
CO4	Individualize dosage regimen and therapeutic drug monitoring							3	3	0	2	2	0	2	2	3	1	3	

**FACULTY OF PHARMACY, INTEGRAL UNIVERSITY, LUCKNOW.**

**CO-PO MAPPING**

**PHARM. D. YEAR : 5<sup>th</sup>**

COURSE CATEGORY	CODE	SUBJECT	PERIODS				EVALUATION		PO													
			L	T	P	C	S	ESE	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11			
<b>PRY</b>	<b>PRY504</b>	<b>Pharmacotherapeutics-III</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>30</b>	<b>70</b>														
<b>CO1</b>	Students understand the pathophysiology & diagnosis of GIT & liver disorder and their management/controversies including patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).							3	3	2	2	2	2	1	1	1	1	1	2			
<b>CO2</b>	Students have ability to explore the pathophysiology & diagnosis of hematological disorder and their management/controversies.							3	3	2	2	2	2	1	1	1	1	2				
<b>CO3</b>	Students have ability to effectively communicate the pharmacotherapy of CNS disorder and their management/controversies.							3	3	2	2	2	2	1	1	1	1	2				
<b>CO4</b>	Students analyzed the pathophysiology & diagnosis of Psychiatric disorder and their management/controversies including patient-specific parameters relevant in initiating drug therapy and monitoring therapy.							3	3	2	2	2	2	1	1	1	1	2				
<b>CO5</b>	Students analyze the Pharmacotherapeutics of pain management and also able to elucidate the Evidence Based Medicine.							3	3	2	2	2	2	1	1	1	1	2				
<b>CO6</b>	Students able to elucidate the Evidence Based Medicine.							3	3	2	2	2	2	1	1	1	1	2				