

GURU NANAK INSTITUTE OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

**Attainment of Programme Outcomes
and Course Outcomes as evaluated by
the institution**

COURSE OUTCOMES

UBJECT	CO LABEL	CO STATEMENT
Pharmaceut ical analysis (PT101)	COPT101.1	Recall various terminologies and stoichiometric calculations involved in Pharmaceutical Analysis.
	COPT101.2	Illustrate the role of pharmaceutical analyst in the profession
	COPT101.3	Distinguish the various principles of conventional techniques.
	COPT101.4	Evaluate the various techniques and tools available for the analysis of any chemical substance.
Human Physiology (PT215)	CO.PT215.1	Explain the gross morphology, structure and functions of various organs of the human body.
	CO.PT215.2	Describe the various homeostatic mechanisms and their imbalances.
	CO.PT215.3	Identify the various tissues and organs of different systems of human body
	CO.PT215.4	Appreciate coordinated working pattern of different organs of each system
Pharmaceut ical Engineerin g (PT317)	COPT317.1	To understand the various unit operations used in pharmaceutical industries.
	COPT317.2	To interpret different material handling technique.
	COPT317.3	To Explain different processes in pharmaceutical Manufacturing Industry.
	COPT317.4	To elaborate different unit operations in pharmaceutical industry.
	COPT317.5	To appraise various preventive methods used for corrosion control in pharmaceutical industry/
Industrial Pharmacy (PT413)	COPT413.01	Develop knowledge regarding Pharmaceutical dosage form development
	COPT413.02	Interpret different techniques of pharmaceutical dosage forms manufacturing
	COPT413.03	Analyze different quality control parameters of pharmaceutical dosage forms.
	COPT413.04	Formulate different cosmeceuticals.

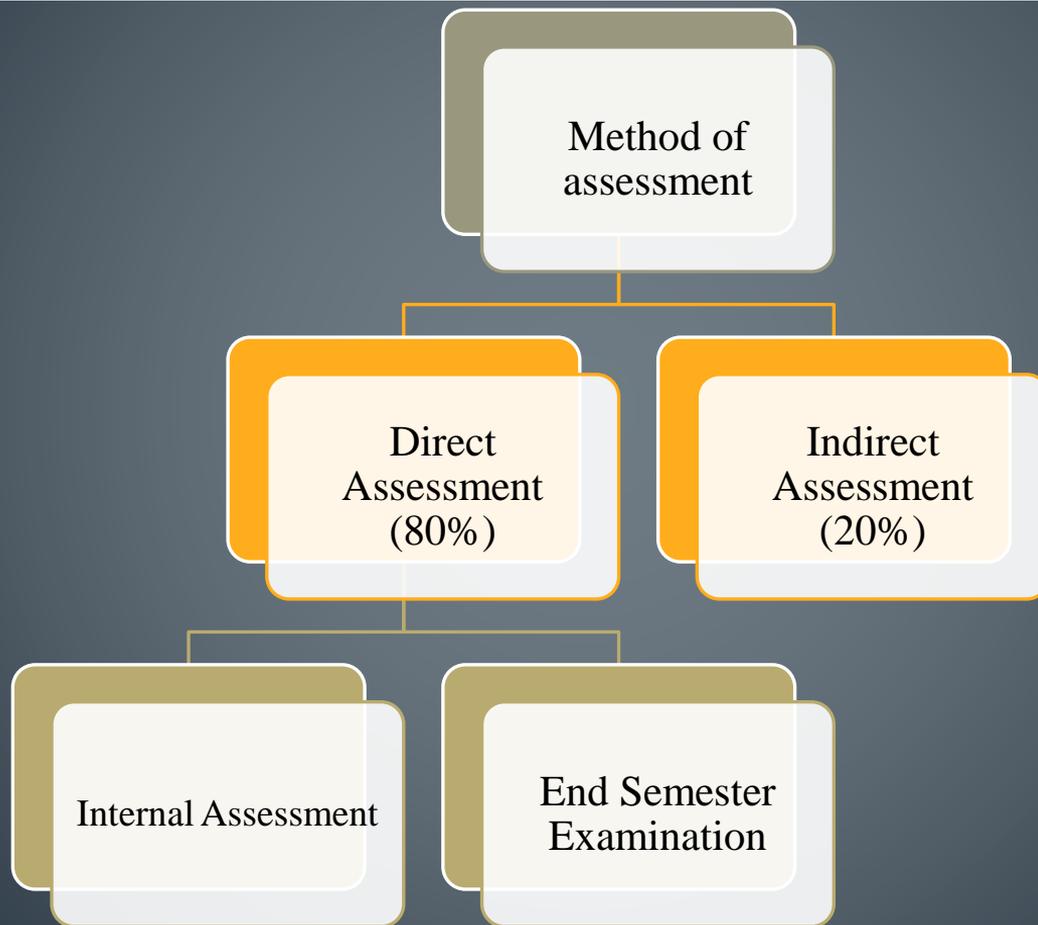
COURSE OUTCOMES

SUBJECT	CO LABEL	CO STATEMENT
Pharmaceutical Jurisprudence (PT516)	COPT516.1	Awareness and Recognize about the Legislation related to Pharmacy & Pharmaceutical Sciences
	COPT516.2	To Understand and Judge the Ethics, Pharmacy Act of India, Drugs & Cosmetics Act of India 1940 and Rules 1945
	COPT516.3	Awareness to the Responsibility towards Medicinal & Toiletries Preparation Act, Narcotics Drugs & Psychotropic Substances Act and finally Drug Price Controlling Authority norms.
	COPT516.4	To Judge, be Aware and to Appraise the wrongs of Drugs & Magic Remedies Act, MTP Act, Awareness of CPCSEA, to Understand the Shop, Factory & Patent Act.
	COPT516.5	To understand the value of law and jurisdiction in the field of pharmaceutical sciences.
Biopharmaceutics & Pharmacokinetics (PT616)	COPT616.1	Explain the basic concepts of biopharmaceutics and pharmacokinetics .
	COPT616.2	Evaluate the pharmacokinetic parameters to describe the kinetics of drug ADME
	COPT616.3	Distinguish the concepts of bioavailability and bioequivalence study of drug products and their significance
	COPT616.4	Apply the knowledge of pharmacokinetic drug interactions in combination therapy

COURSE OUTCOMES

SUBJECT	CO LABEL	CO STATEMENT
Instrumental method of analysis (PT711)	COPT 711.1	Understand the electromagnetic spectrum and its interaction with matter and apply this knowledge for drug analysis
	COPT 711.2	Explain and analyze the principle, instrumentation, applications of UV, IR and Atomic Absorption Spectroscopy, Fluorimetry, Flame photometry
	COPT 711.3	Understand the chromatographic separation and analyse the drugs using these techniques instruments.
	COPT 711.4	Explain the principle and instrumentation of GC and HPLC and design their application in pharmacy
	COPT 711.5	Develop the knowledge for various quantitative & qualitative analysis of drugs
Biostatistics and Research Methodology PT812	COPT812.1	Understand the basic statistics related to designing of experiments and representation of data
	COPT812.2	Design the experiments on the basis of statistical principles.
	COPT812.3	Analyze experimental results using different statistical software packages like Design Expert, SPSS, Minitab and R.
	COPT812.4	Understand the quality policies for biomedical research as per regulatory guidelines.

CO ASSESSMENT PROCESSES



DIRECT ASSESSMENT METHODS

Internal Assessment

Assignments

Online class tests

Seminars

Theory and practical end Semester Exams

Projects

INDIRECT ASSESSMENT TOOLS



Alumni Feedback



**Students Placement & Position
Record**



Student Research Record



Employers Assessment

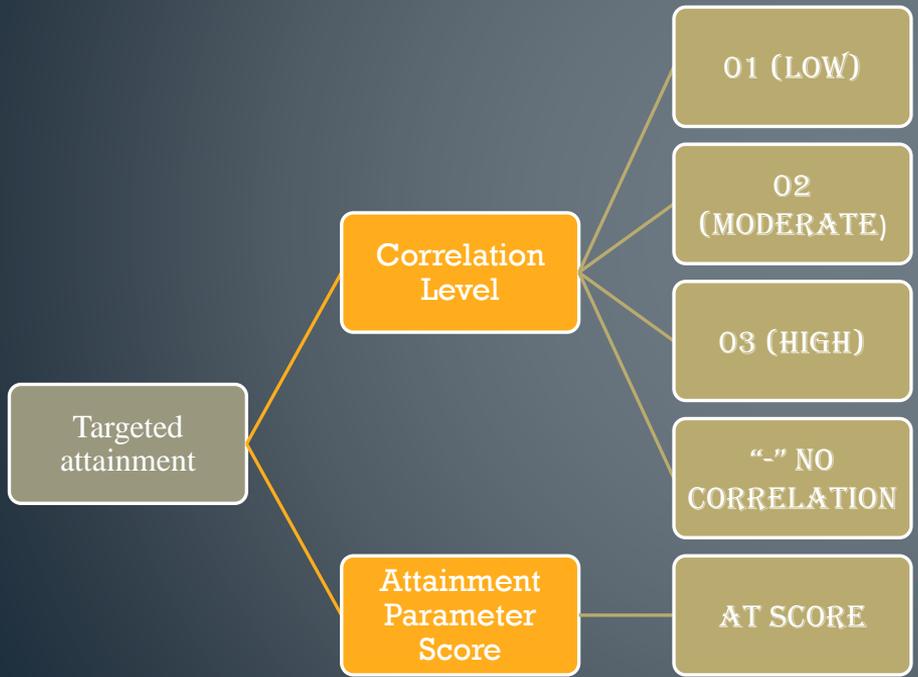


**Industry Interaction and
Feedback**



**Industrial Advisory body
Feedback**

CO-PO ATTAINMENT CRITERIA



AT Score	0	<45% of students scoring more than 60% marks
	1	>=45% and <55% of students scoring more than 60% marks
	2	>=55% and <65% of students scoring more than 60% marks
	3	>=65% of students scoring more than 60% marks

GRADE POINT (GP)

Qualification	Grade	Score on 100 percentage Points	Point
Outstanding	'O'	100 to 90	10
Excellent	'E'	89 to 80	9
Very Good	'A'	79 to 70	8
Good	'B'	69 to 60	7
Fair	'C'	59 to 50	6
Below Average	'D'	49 to 40	5
Failed	'F'	Below 40	2

Credit Point (CrP) = GP X Credits for the course

CREDIT INDEX = Σ CREDIT POINT
 GRADE POINT AVERAGE = CREDIT INDEX / Σ CREDITS

$$SGPA = \frac{\text{CREDIT INDEX}}{\Sigma \text{ CREDITS}};$$

N.B. Grade 'C' shall be considered as average grade.

Grade Point Average (GPA):

$$YGPA = \frac{\text{CREDIT INDEX of Autumn Sem} + \text{CREDIT INDEX of Spring Sem}}{\Sigma \text{ CREDITS of Autumn Sem} + \Sigma \text{ CREDITS of Spring Sem}}$$

$$\text{CUMULATIVE GRADE POINT AVERAGE (CGPA)} = \frac{\sum_{K=1}^{K=n} \text{CREDIT INDEX OF Kth SEMESTER}}{\sum_{K=1}^{K=n} \text{CREDIT OF Kth SEMESTER}}$$

CO-PO MATRICES

SUBJECT CODE	CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PT317	COPT317.1	2	3	2	-	-	1	-	-	-	2	3
	COPT317.2	3	3	1	-	-	2	2	-	2	2	2
	COPT317.3	3	3	3	2	3	2	1	2	-	3	3
	COPT317.4	2	3	2	3	3	2	2	2	3	2	1
	COPT317.5	3	3	2	2	2	2	2	2	2	1	2
	Avg COPT317	2.6	3	2	1.4	1.6	1.8	1.4	1.2	1.4	2	2.2
	80% Avg	2.08	2.4	1.6	1.12	1.28	1.44	1.12	0.96	1.12	1.6	1.76
PT413	COPT413.01	3	3	3	3	2	2	1	3	2	2	1
	COPT413.02	3	3	3	3	3	2	1	3	2	2	3
	COPT413.03	3	3	2	3	2	2	1	3	2	3	3
	COPT413.04	3	3	2	3	2	2	1	3	2	2	3
	COPT413	3	3	2.5	3	2.25	2	1	3	2	2.25	2.5
	80% of Avg	2.4	2.4	2	2.4	1.8	1.6	0.8	2.4	1.6	1.8	2

CO-PO MATRICES

SUBJECT CODE	CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PT516	COPT516.1	2	1	2	2	2	3	2	1	2	2	2
	COPT516.2	3	2	3	2		2	3	2	3	2	2
	COPT516.3	2	2	2	1	3	1	2	3	–	1	3
	COPT516.4	2	1	1		3	2	2	1			3
	COPT516.5	2	1	3	2	2	–	2	1	3	2	2
	AVG. COPT516	2.2	1.4	2.2	1.75	2.5	2	2.2	1.6	2.67	1.75	2.4
	80% OF AVG	2.2	1.4	2.2	1.75	2.5	2	2.2	1.6	2.67	1.75	2.4
PT616	COPT616.1	3	1	2	1	2	1	1	1	2	2	3
	COPT616.2	3	3	2	2	3	3	2	2	2	3	3
	COPT616.3	3	3	2	1	2	2	1	2	2	3	3
	COPT616.4	3	3	2	3	3	3	2	3	2	3	3
	AVG. COPT616	3	2.5	2	1.75	2.5	2.25	1.5	2	2	2.75	3
	80% OF AVG	2.4	2	1.6	1.4	2	1.8	1.2	1.6	1.6	2.2	2.4

CO-PO MATRICES

SUBJECT CODE	CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PT 711	COPT711.1	3	1	2	–	3	2	3	1	2	2	3
	COPT711.2	3	2	1	2	2	2	1	1	2	1	3
	COPT711.3	3	3	1	1	2	2	2	1	2	1	3
	COPT711.4	3	1	2	2	2	2	2	1	2	1	–
	COPT711.5	3	2	2	2	2	2	2	1	2	1	3
	AVG COPT711	3	1.8	1.6	1.75	2.2	2	2	1	2	1.2	3
	80% OF AVG	2.4	1.44	1.28	1.4	1.76	1.6	1.6	0.8	1.6	0.96	2.4
PT812	COPT812.1	3	3	3	1	1	3	1	3	2	2	1
	COPT812.2	3	3	3	1	1	3	1	3	2	2	3
	COPT812.3	3	3	2	1	1	3	1	3	2	3	3
	COPT812.4	3	3	2	1	1	3	1	3	2	2	3
	AVG COPT812	3	3	2.5	1	1	3	1	3	2	2.25	2.5
	80% OF AVG	2.4	2.4	2	0.8	0.8	2.4	0.8	2.4	1.6	1.8	2

CO-PO MATRICES TARGETED FOR ALL FOUR YEARS OF STUDY

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PT101	2.4	2.4	2.08	1.67	1.28	0.8	0.64	1.12	2.24	1.28	2.4
PT215	2.4	2	2.2	1.8	1.8	0.8	0.8	0.8	0.8	0.8	0.8
PT317	2.08	2.4	1.6	1.12	1.28	1.44	1.12	0.96	1.12	1.6	1.76
PT413	2.4	2.4	2	2.4	1.8	1.6	0.8	2.4	1.6	1.8	2
PT516	2.2	1.4	2.2	1.75	2.5	2	2.2	1.6	2.67	1.75	2.4
PT616	3	2.5	2	1.75	2.5	2.25	1.5	2	2	2.75	3
PT 711	2.4	1.44	1.28	1.4	1.76	1.6	1.6	0.8	1.6	0.96	2.4
PT812	2.4	2.4	2	0.8	0.8	2.4	0.8	2.4	1.6	1.8	2
Overall attainment targeted	2.41	2.18	1.92	1.585	1.71	1.61	1.18	1.51	1.70	1.59	2.09

CO-PO MATRICES REACHED FOR ALL FOUR YEARS OF STUDY

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PT101	2.4	2.4	2.08	1.67	1.28	0.8	0.64	1.12	2.24	1.28	2.4
PT215	2.8	2.4	2.6	2.2	2.05	1.2	1.3	1.05	1.1	1.14	1.3
PT317	2.2	2.5	1.8	2	2.08	1.65	1.7	1.58	1.93	1.73	2.04
PT413	2.8	2.8	2.4	2.8	2.05	2	1.3	2.65	1.9	2.14	2.5
PT516	2.98	1.96	2.77	2.44	2.96	2.77	2.65	2.22	2.14	2.17	2.02
PT616	2.4	2.07	1.7	1.57	1.87	1.9	1.5	1.5	1.6	2.17	2.5
PT 711	2.8	1.84	1.68	1.8	1.96	2	2.1	1	1.9	1.46	2.9
PT812	2.8	2.8	2.4	1.2	1.05	2.8	1.3	2.65	1.9	2.13	2.5
Overall attainment reached	2.64	2.34	2.17	1.96	1.91	1.89	1.56	1.72	1.83	1.77	2.27

ACTION TO BE TAKEN

1

- **Modification in Assessment tools**

2

- **Increasing the degree of difficulty “AT SCORE” Level**

3

- **Increasing the target level**



THANK YOU