Faculty of Pharmacy
Master of Pharmacy (M. Pharm.)
(W. E. F.: 2023-24)
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Name of Faculty	:	Faculty of Pharmacy
Name of Program	:	Master in Pharmacy
Course Code	:	1MPH05
Course Title	:	Pharmaceutics Practical I
Type of Course	:	Pharmaceutics
Year of Introduction	:	2023-24

Prerequisite	:	To have sufficient knowledge about basics of pharmaceutical dosage forms
Course Objective	:	This course is designed to impart knowledge on the area of advances in novel drug delivery systems.
Course Outcomes	:	At the end of this course, students will be able to understand.
	CO1	**Analysis** of Pharmacopoeial compounds and their formulations by UV Vis spectrophotometer/ HPLC/ Gas Chromatography
	CO2	To **apply** the knowledge of Pharmaceutics for formulation of sustained release matrix tablets, Trans dermal patches, Mucoadhesive tablet.
	CO3	To carry out the **evaluation** of sustained release matrix tablets, Trans dermal patches, Mucoadhesive tablet.
	CO4	Pre-formulation studies of tablets, effect of compressional force and to plot Heckle plot, Higuchi and peppa's factors

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
00	00	12	06	00	00	100	50	150

Legends: ***L****-Lecture;* ***T****–Tutorial/Teacher Guided Theory Practice;* ***P*** *– Practical,* ***C*** *– Credit,* ***SEE*** *– Semester End Examination,* ***CIA*** *- Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)*

Course Content

Unit No.	Topics	Practical Hours	Weightage	Mapping with COs
1	Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer	12	11.11%	CO1
2	Simultaneous estimation of multi component containing formulations by UV spectrophotometry	12	11.11%	CO1
3	Experiments based on HPLC	12	11.11%	CO1
4	Experiments based on Gas Chromatography	12	11.11%	CO1
5	Estimation of riboflavin/quinine sulphate by fluorimetry	12	11.11%	CO1
6	Estimation of sodium/potassium by flame photometry	6	5.55%	CO1
7	To perform In-vitro dissolution profile of CR/ SR marketed formulation	12	11.11%	CO3
8	Formulation and evaluation of sustained release matrix tablets.	12	11.11%	CO2 CO3
9	Formulation and evaluation osmotically controlled DDS	12	11.11%	CO2 CO3
10	Preparation and evaluation of Floating DDS-hydro dynamically balanced DDS.	12	11.11%	CO2 CO3
11	Formulation and evaluation of Muco adhesive tablets.	06	5.55%	CO2 CO3
12	Formulation and evaluation of trans dermal patches.	12	11.11%	CO2 CO3
13	To carry out preformulation studies of tablets.	06	5.55%	CO4
14	To study the effect of compressional force on tablets disintegration time.	06	5.55%	CO4
15	To study Micromeritic properties of powders and granulation.	06	5.55%	CO4
16	To study the effect of particle size on dissolution of a tablet.	12	11.11%	CO4
17	To study the effect of binders on dissolution of a tablet.	12	11.11%	CO4

18	To plot Heckel plot, Higuchi and peppas plot and determine similarity factors.	06	5.55%	CO4

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**0**	**25**	**25**	**25**	**25**	**0**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Major Equipment/ Instruments

Sr. No.	Name of Major Equipment/ Instruments and Software
1	High Performance Liquid Chromatography (HPLC)
2	Dissolution Apparatus
3	UV- Visible Spectroscopy (UV-Visible)
4	Potentiometer
5	Hardness instrument
6	Disintegration
7	Friability
8	Bulk Density Apparatus
9	Melting Point Instrument
10	Sonicator
11	Centrifuge Spectroscopy
12	Viscometer

Suggested Learning Websites

Sr. No.	Name of Website
1	https://pci.nic.in/pdf/Syllabus_B_Pharm.pdf
2	https://www.aicte-india.org/downloads/bpharma.pdf.
3	https://www.ipc.gov.in/
4	https://www.ayush.gov.in/
5	https://ayudmla.gujarat.gov.in/home.php
6	https://www.fda.gov/
7	https://www.pharmacopoeia.com/
8	https://ipapharma.org/
9	https://gpat.nta.nic.in/
10	https://drnaitiktrivedi.com/
11	https://gdc4gpat.com/course/gpat/

12	https://niscpr.res.in/
13	https://delnet.in/
14	https://ihubgujarat.in/
15	https://www.ssipgujarat.in/

Reference Books

Sr. No.	Name of Reference Books
1	Practical Pharmaceutical Chemistry – Beckett and Stenlake, Vol II, 4th edition, CBS Publishers, New Delhi, 1997.
2	Quantitative Analysis of Drugs in Pharmaceutical formulation - P D Sethi, 3rd Edition, CBS Publishers, New Delhi, 1997.
3	Y W. Chien, Novel Drug Delivery Systems, 2nd edition, revised and expanded, Marcel Dekker, Inc., New York, 1992.
4	N.K. Jain, Controlled and Novel Drug Delivery, CBS Publishers & Distributors, New Delhi, First edition 1997 (reprint in 2001).
5	S.P.Vyas and R.K.Khar, Controlled Drug Delivery - concepts and advances, Vallabh Prakashan, New Delhi, First edition 2002.
6	Theory and Practice of Industrial Pharmacy By Lachmann and Libermann.
7	Pharmaceutical dosage forms: Tablets Vol. 1-3 by Leon Lachmann.
8	Pharmaceutical Dosage forms: Disperse systems, Vol, 1-2; By Leon Lachmann.
9	Physical Pharmacy; By Alfred mart
10	Pharmaceutical Preformulations; By J.J. Wells.