Annexure-I

1. Approval of scheme, syllabi and academic calendar for session 2025-26.

ACADEMIC CALENDAR YEAR 2025-26
FOR DEGREE PROGRAMMES: B. Pharm I year

SI No.	Particular	Ist Semester
1.	Duration of the semester	August 2025-January 2026
2.	Commencement of classes	19 Sep, 2025
3.	Student Induction programme for Fresh Batch	22 -29 Sep , 2025
4.	I Sessional Exam	28 Oct-04 Nov, 2025
5.	II Sessional Exam	22-27 Dec, 2025
6.	Last Date of teaching	24 Jan, 2026
7.	III Sessional Exam	27 Jan-03 Feb, 2026
8.	End semester Practical Examination	04-09 Feb, 2026
9.	End semester Theory Examination	24 Feb-02 March, 2026.
10.	Declaration of Result	In the month of March

- Dussehra Vacation- 01-07 Oct, 2025
- Diwali Vacation - 18-25 Oct, 2025

ACADEMIC CALENDAR YEAR 2025-26
FOR DEGREE PROGRAMMES: B. Pharm I year

SI No.	Particular	IInd Semester Expected Plan	IInd Semester Actual Plan
1.	Duration of the semester	Jan-June, 2026	
2.	Commencement of classes	09 March, 2026	
3.	I Sessional Exam	20-25 April, 2026	
4.	II Sessional Exam	18-23 May, 2026	
5.	Add on programme on computer fundamentals & AI Tools	25 May-05 June, 2026	
6.	Last Date of teaching	06 June, 2026	
7.	End semester Theory Examination	08-20 June, 2026	
8.	End semester Practical Examination	22-27 June, 2026	
9.	Declaration of Result	In the Month of July	

- Holi- 04 March, 2026
- Expert Talk- 28 March, 2026
- Id-ul-fitar- 21 March, 2026
- Ram Navami- 26 March, 2026
- Mahavir Jayanti- 31 March, 2026
- Ambedkar Jayanti- 14 April, 2026
- National Seminar/Skill orientation Programme- 15 April, 2026
- Parsuram Jayanti- 19 April, 2026
- Buddha Purnima- 01 May, 2026
- Id ul Juha- 27 May, 2026.
- Moharaam- 26 June, 2026.

ACADEMIC CALENDAR YEAR 2025-26
FOR DEGREE PROGRAMMES: D. Pharm I year

SI No.	Particular	Ist YEAR
1.	Duration of the semester	2025-26
2.	Commencement of classes	19 September, 2025
3.	Student Induction programme for new batch	22 -29 Sep , 2025
4.	I sessional Exam	09-13 December, 2025
5.	II sessional Exam	23-27 Feb, 2026
6.	III sessional Exam	06-11 April, 2026
7.	Last Date of teaching	18 April, 2026
8.	End semester Theory Examination	21 April-04 May, 2026
9.	End semester Practical Examination	5-12 May, 2026
10.	Submission of Practical Marks to the University	On the day of practical exam
11.	Declaration of Result	In the Month of June

- Dussehra Vacation- 01-07 Oct, 2025
- Diwali Vacation - 18-25 Oct, 2025
- Holi- 04 March, 2026
- Id-ul-fitar- 21 March, 2026
- Ram Navami- 26 March, 2026
- Expert Talk- 28 March, 2026
- Mahavir Jayanti- 31 March, 2026
- Ambedkar Jayanti- 14 April, 2026
- National Seminar/Skill orientation Programme- 15 April, 2026
- Parsuram Jayanti- 19 April, 2026
- Buddha Purnima- 01 May, 2026
- Id ul Juha- 27 May, 2026.
- Moharaam- 26 June, 2026.

ACADEMIC CALENDAR YEAR 2025-26
FOR DEGREE PROGRAMMES: M. Pharm I year

SI No.	Particular	I[st] Semester
1.	Duration of the semester	August 2025-January 2026
2.	Commencement of classes	27 October, 2025
3.	I Sessional Exam	05-06 Dec, 2025
4.	II Sessional Exam	27-28 Feb, 2026
5.	Last Date of teaching	04 March, 2026
6.	End semester Practical Examination	05-11 March, 2026
7.	End semester Theory Examination	12-26 March, 2026
8.	Declaration of Result	In the month of April

ACADEMIC CALENDAR YEAR 2025-26
FOR DEGREE PROGRAMMES: M. Pharm I year

SI No.	Particular	II[nd] Semester Expected Plan	II[nd] Semester Actual Plan
1.	Duration of the semester	Jan-June, 2026	
2.	Commencement of classes	1 April, 2026	
3.	I sessional Exam	04-09 May, 2026	
4.	II sessional Exam	08-13 June, 2026	
5.	Last Date of teaching	30 June, 2026	
6.	End semester Examination (Theory and Practical)	01-11 July, 2026	
7.	Declaration of Result	In the Month of July	

SCHEME (B. PHARM, M. PHARM, D. PHARM)

Tables-X: Schemes for internal assessments and end semester examinations semester wise

Semester I

Course code	Name of the course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total			
			Marks	Duration		Marks	Duration	
BP101T	Human Anatomy and Physiology I– Theory	10	15	1 Hr	25	75	3 Hrs	100
BP102T	Pharmaceutical Analysis I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP103T	Pharmaceutics I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP104T	Pharmaceutical Inorganic Chemistry – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP105T	Communication skills – Theory *	5	10	1 Hr	15	35	1.5 Hrs	50
BP106RBT BP106RMT	Remedial Biology/ Mathematics – Theory*	5	10	1 Hr	15	35	1.5 Hrs	50
BP107P	Human Anatomy and Physiology – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP108P	Pharmaceutical Analysis I – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP109P	Pharmaceutics I – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP110P	Pharmaceutical Inorganic Chemistry – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP111P	Communication skills – Practical*	5	5	2 Hrs	10	15	2 Hrs	25
BP112RBP	Remedial Biology – Practical*	5	5	2 Hrs	10	15	2 Hrs	25
	Total	**70/75$/80#**	**115/125$/130#**	**23/24$/26# Hrs**	**185/200$/210#**	**490/525$/ 540#**	**31.5/33$/ 35# Hrs**	**675/725$/ 750#**

#Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB)course.
$Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM)course.
* Non University Examination (NUE)

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal
Program Name: Diploma PHARMACY
Scheme Of Exam : Pharmacy -2021
Diploma in Pharmacy (Part I) Examination

Course code *	Sub Code	Paper Code	Subject	Maximum Marks for Theory		Total	Course Code	Maximum Marks For Practical				Total
				Final Exam	Sessional Exam			Final Exam	Sessional Exam	Assignment	Field Visit	
ER20-11T	101	8101	Pharmaceutics	80	20	100	ER 20-11P	80	10	5	5	100
ER20-12T	102	8102	Pharmaceutical Chemistry	80	20	100	ER20-12P	80	10	10		100
ER20-13T	103	8103	Pharmacognosy	80	20	100	ER20-13P	80	10	5	5	100
ER20-14T	104	8104	Human Anatomy & Physiology	80	20	100	ER20-14P	80	20			100
ER20-15T	105	8105	Social Pharmacy	80	20	100	ER20-15P	80	10	5	5	100
					Total	500					Total	500
					Grand Total	500(T) + 500(P)=1000						

Note -1. Please refer to the PCI ER-2020 for Guide lines of Exam (Page no 9-11)(Point No -5&6)
2. Course code as per PCI ER-2020

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (M.P.)

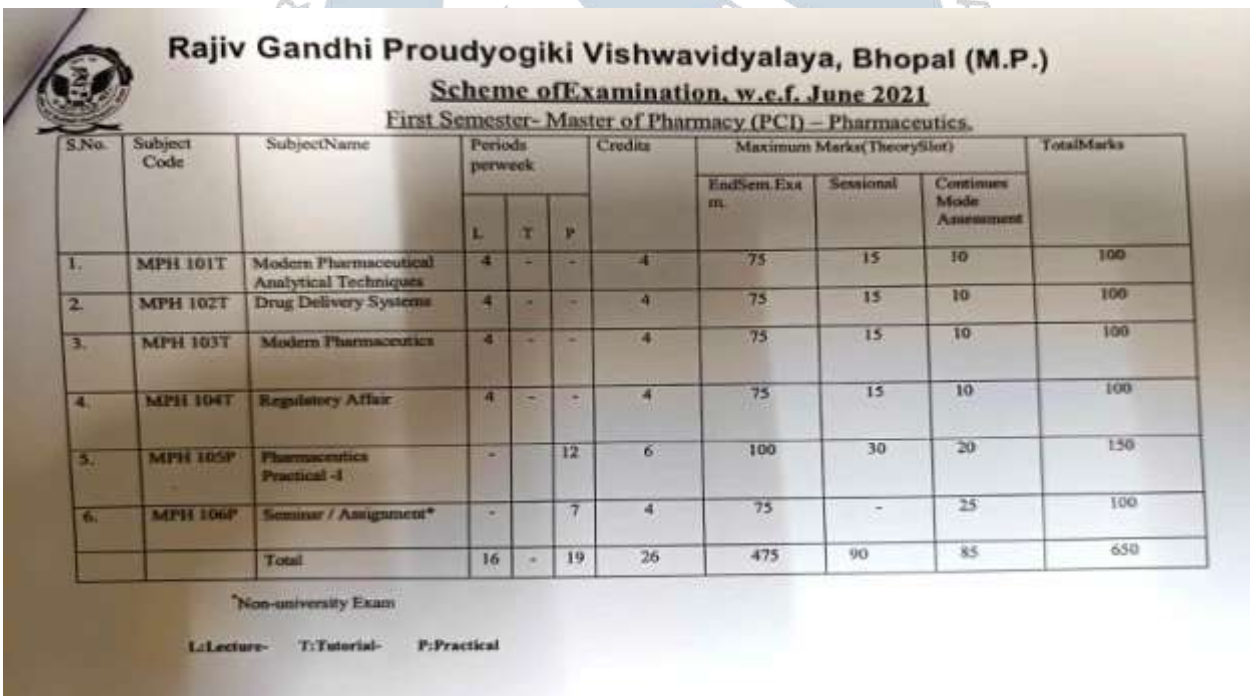
Scheme of Examination,w.e.f. June 2021

First Semester- Master of Pharmacy (PCI) – Pharmaceutical Chemistry.

S.No.	Subject Code	SubjectName	Periods perweek			Credits	Maximum Marks			TotalMarks
			L	T	P		EndSem.Exam.	Sessional Exam.	Continues Mode Assessment	
1.	MPC101T	Modern Pharmaceutical Analytical Techniques	4	-	-	4	75	15	10	100
2.	MPC102T	Advance Organic Chemistry - I	4	-	-	4	75	15	10	100
3.	MPC103T	Advance Medicinal Chemistry	4	-	-	4	75	15	10	100
4.	MPC 104T	Chemistry of Natural Product	4	-	-	4	75	15	10	100
5.	MPC 105P	Pharmaceutical Chemistry Practical -I	-		12	6	100	30	20	150
6.	MPC 106P	Seminar / Assignment *	-		7	4	75	-	25	100
		Total	16	-	19	26	475	90	85	650

*Non-university Exam

L:Lecture- T:Tutorial- P:Practical



Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (M.P.)

Scheme ofExamination, w.e.f. June 2021

First Semester- Master of Pharmacy (PCI) – Pharmaceutics.

S.No.	Subject Code	SubjectName	Periods perweek			Credits	Maximum Marks(TheorySlot)			TotalMarks
			L	T	P		EndSem.Exam.	Sessional	Continues Mode Assessment	
1.	MPH 101T	Modern Pharmaceutical Analytical Techniques	4	-	-	4	75	15	10	100
2.	MPH 102T	Drug Delivery Systems	4	-	-	4	75	15	10	100
3.	MPH 103T	Modern Pharmaceutics	4	-	-	4	75	15	10	100
4.	MPH 104T	Regulatory Affair	4	-	-	4	75	15	10	100
5.	MPH 105P	Pharmaceutics Practical -I	-		12	6	100	30	20	150
6.	MPH 106P	Seminar / Assignment*	-		7	4	75	-	25	100
		Total	16	-	19	26	475	90	85	650

*Non-university Exam

L:Lecture- T:Tutorial- P:Practical

Annexure -II

STANDARD OPERATING PROCEDURE (SOP)

FOR SEED FUND UTILIZATION

1. PREAMBLE

This Standard Operating Procedure (SOP) outlines the guidelines and procedures for application, approval, utilization, monitoring, and reporting of Seed Funds granted to faculty members and students of the institute to promote research, innovation, entrepreneurship, and academic excellence.

2. OBJECTIVES

- To promote research and innovation culture within the institution.
- To support pilot research projects and prototype development.
- To encourage interdisciplinary and socially relevant research.
- To facilitate publications, patents, and start-up initiatives.
- To enable faculty and students to secure external funding.
- To encourage student trainings and industrial tours.

3. SCOPE

This SOP applies to:

- All eligible faculty members of the institution.
- All Bonafide Diploma/UG/PG students of the institution.

4. DEFINITIONS

- **Seed Fund:** Initial financial support provided by the institution to promote innovative research projects/publications/seminars/FDPs/ Industrial Training/Industrial tour among faculty members and students.
- **Research and Development Committee:** R&D Cell of the institute will be responsible for evaluation, approval and monitoring of the funds allocated after approval from competent authority.

5. ELIGIBILITY CRITERIA

- Faculty Members
  - Must be a regular/approved faculty member.
  - No pending utilization certificate/dues from previous grants.

- Students
  - Must be regular enrolled student of the institute.
  - Must be cleared the entire semester subjects before the date of proposal.
  - No pending dues from the institute on the date of application.
  - Not having any past in disciplinary records.

6. APPLICATION PROCEDURE FOR RESEARCH PROPOSAL:

- All the research proposals should be filled in prescribed format attached in APPENDIX: III.
- Student research Proposal must be recommended by a faculty mentor before appearing to R&D cell for approval.
- Faculty mentor will be compulsory for proposal applied by any research scholar/student.
- Must submit a detailed project proposal before R&D cell prior approval.
- Preference will be given to innovative, patentable, or socially impactful ideas.
- Proposals shall be evaluated based on Novelty and Innovation, Feasibility, Budget Justification, Expected Outcomes, Social/Industrial Relevance.
- Initially, all research projects shall be sanctioned for a period of one year. Any extension beyond this duration shall be granted only after due scrutiny and formal approval by the R&D cell.
- In case any major or minor corrections are advised by the R&D cell, the author/investigator shall incorporate the necessary modifications and resubmit the proposal before the R&D cell for final approval.
- Sanctioned letter (APPENDIX: VII) shall be issued specifying approved budget and duration. Funds will be released to the account to whom the sanction letter is issued. Date of commencement of the project will be the date of issuance of sanctioned letter.
- Half of the sanctioned project amount shall be released within 15 working days from the date of issuance of the sanction letter. The remaining fifty percent (50%) of the sanctioned amount shall be released only after submission of the progress report by the Investigator and its approval by the R&D cell.
- The Investigator shall mandatorily present the mid-term progress report through presentation of the research project before the R&D cell. Based on a thorough review and scrutiny of the progress made, the Cell shall decide whether the project will continue further.
- During the review process, the Cell may seek clarification on any financial transactions, technical aspects, or justifications related to the project. The Investigator shall be required to provide

necessary explanations and satisfactorily address all queries raised by the Cell for further approval and continuation of the project.

- Submission of mid-term Progress Report is compulsory before council, whichever duration is assigned to the investigator and it is reviewed by the committee for further release of funds.
- During project tenure, all the transactions should be made online through the investigator account to which seed money is allocated by the institute.
- Investigator must publish at least 02 research paper mentioned in peer reviewed journals (Refer APPENDIX: VI) and indicated affiliation of the college with the name of corresponding author and he/she have to put the proposal for publication before R&D cell in prescribe format mentioned in Annexure: II for approval before communication. After the approval, investigator can utilize the 50% of the article processing charge (APC) and or a maximum of Rs 5000 (five thousand rupees only) from the seed money sanctioned by the competent authority.
- Investigator must Submit of Final Technical Report within 30 days of completion.
- Upon completion of the project, investigator must submit forwarding letter to R&D cell (Refer APPENDIX: IV), closing report (Refer APPENDIX: V) with all the required documents before council for closure of the project. Unutilized funds must be returned to the seed fund for further utilization. Utilization Certificate must be certified by Accounts Section before submission to R&D cell. Investigator has to submit all the compile report to R&D cell before the closure of the project. After thorough scrutiny, if council satisfies the outputs of the research than council will issue a project closure certificate (Refer APPENDIX: VIII) to the investigator.
- Utilization certificate must meet certain guidelines such as Funds must be utilized within the sanctioned period, Procurement amount will be paid online by the investigator from the account to which seed fund is allocated by the institute, original bills/invoices mentioning the name of the institute must be submitted to accounts for issuance of utilization certificate.
- If any Investigator/s secures a research project from an external funding agency and the project requires financial and/or infrastructural support beyond the amount sanctioned by the agency, he/she shall submit the additional requirements to R&D cell for prior approval mentioned in Appendix-III.
- In case of Noncompliance after approval of the project by the R&D cell includes Recovery of funds, Disqualification from future funding and Disciplinary action as per institutional norms.
- The investigator and co-investigator will not be allowed to leave the institute unless the sanctioned project is complete and or the investigator has to pay entire sanctioned amount with prevailing interest rates.

1. **For research publication:** (Refer APPENDIX: I)

- Research output must be publications/patents mentioning the name of the institute with corresponding author at first position.
- All research publication proposals must be completed in the format specified in APPENDIX-I, with lists all of the authors' names to be submitted to the R&D cell prior to communication to the journal. Publications must be in the active Scopus indexed or other indexed and impact factor journals listed in the APPENDIX-VI, which will be reviewed every six months. Only after receiving permission from the R&D cell and being published in the journal listed in the annexure will be applicable for release of funds. The author must provide appropriate evidence of the journal indexing/impact factor if they plan to publish in a journal not included in the annexure. He/she will be eligible for the disbursement of funds once the R&D cell has been satisfied. The institute's name must be included in the designation of the corresponding author and the first three authors must be from the institute. After the committee verifies the payment done by the author, 50% of the article processing charge (APC) or a maximum of Rs 5000 (five thousand rupees only) would be reimbursed, whichever comes first.
- One corresponding author can seek for financial assistance twice in an academic year.

2. **For workshop/seminar/FDP: (**Refer APPENDIX-II**)**

- All participants seek to attain sponsored/recognized by any govt. agencies Workshop/Seminar/FDPs must apply in the prescribed format specified in APPENDIX-II with all the required documents.
- In Seminar/conferences, author must present poster/oral presentation for release of funds. In FDPs/training programmes participant must attend total duration prescribed by the organizing authority. Maximum registration fees amount of 1000/- (Rupees one thousand only) will be reimbursed by the institute after approval by the R& D cell. Higher registration fees of reputed international conferences/FDP/ conference of national interest will be evaluated by the committee and reimbursed as per decision by the competent authority. Travelling allowance in station/out station will be reimbursed as per guidelines of JNCET.

7. AMENDMENT

- The institution reserves the right to amend this SOP with approval of the competent authority.

APPENDIX: I

Proposal for Research Publication to Academic Council for Financial Support

Paper Title				
Name of All authors with affiliation				
Journal Name with ISSN number				
Whether journal is included in APPENDIX: VI (Yes/No) (If No please attach the proof of indexing in Scopus)				
Abstract up to 500 words				
Signature of corresponding author				
Date of submission				
Approval Status by the Academic council (Yes/No/minor corrections/major corrections) **If No, Please mention the reason for disapproval**				
Signature of AC members with name and date				

APPENDIX: II

Proposal for Financial Support to attend Seminar/conference/FDPs

Name of the Participant	
Seminar/Conference/FDPs details	
Venue of the Seminar/Conference/FDPs	
Sponsoring Agency	
Whether Seminar/Conference/FDPs (online mode/offline mode)	
Prescribed registration fees of the Seminar/Conference/FDPs	
Whether presented in seminar/conference/FDPs (Oral/Poster/NA)	
Topic of the Oral/poster Presentation	
Whether presented in (online mode/offline mode) Attach proof of presentation*	
Whether Awarded (Yes/NO)	
Signature of the Participant	
Date of submission	
Approval status by AC	
Tick the Checkbox attached with the form **(Mandatory disclosure to be attach with the form)**	☐ Brochure of the Seminar/Conference/FDPs ☐ Proof of registration ☐ Presentation certificate ☐ Picture during presentation ☐ Travelling Bill ☐ Proof of participation certificate in case of FDPs ☐ Proof of attendance during FDPs
Approval Status by the Academic council after verification (Yes/No)	

If No Please mention the reason for disapproval				
Signature of AC members with Name and date				

APPENDIX: III

Proposal for Project to Academic Council for Financial Support

Name of Principal Investigator:	
Name of mentor: (If any)	
Project Title	
Objectives	
Methodology/Plan of Work	
Expected outcome	
Total Budget Estimated **(Break wise budget format is attached to fill up)**	
Budget justification	
Funding requested from institute	
Total Timeline required for completion **(Break wise timeline distribution is attached to fill up)**	
Institute Benefits from the Proposed Project	

Bank Account no. of investigator to whom project is sanctioned				
Declaration	"I hereby declare that the information provided is true and the funds requested will be utilized solely for the stated academic purpose, If any fund remained unutilized I will refund it to institute. I will abide by the rules and regulations of the institute, I will provide mid term progress report and utilization certificate before council in stipulated time period."			
Signature of the Principal Investigator				
Signature of the Mentor (If any)				
Date of Submission				
Approval Status by the Academic council (Yes/No/minor corrections/major corrections) **If No Please mention the reason for disapproval**				
Amount Sanctioned from Seed Fund				
Approval Number with date of commencement				
Signature of the all members of the academic council with name and date				

Break wise Budget Estimate

SI	Item Description	Quantity	Unit Cost	Total Cost
Total Budget Estimate				

*Rows and extra pages can be added according to your preference

Signature of the Investigator

Signature of the Mentor (If Any)

Break wise Timeline of the Proposal

Si.	Phase	Activity	Duration
Total Duration			

*Rows and extra pages can be added according to your preference

Signature of the Investigator

Signature of the Mentor (If Any)

APPENDIX: IV

Forwarding Letter to Council Members

Date:

Subject: Submission of Final Project Report for Council Approval

Respected Sir/Madam,

I hereby submit the final report of the project titled"_____ _____" completed under the sanction order no. _____.

The project objectives have been successfully achieved as per the approved proposal. The detailed report including **Abstract, Introduction, Objective, methodology, result & Discussion, financial utilization certificate verified by accounts, outcomes and achievement, Progress report (both mid-term and final), Financial statement of the account of the investigator during project duration, Publications/patents, presentation certificates** are enclosed herewith for kind approval by the Council.

I request the honorable members to review the report and accord approval for closure of the project.

Thanking you.

Yours sincerely,

Signature of the Investigator

APPENDIX-V

Date:

Project Closing Report

Name of Principal Investigator:(PI)	
Name of mentor: (If any)	
Project Title	
Project Sanctioned Number	
Date of commencement	
Date of completion	
Project Duration in years	
Total Sanctioned Amount:	
Total Utilized Amount:	
Balance amount	
Tick the Checkbox attached with closing report **(Mandatory disclosure to be attach with the form)**	☐ Abstract ☐ Summary ☐ Complete project report including (introduction, methodology, result and discussion, conclusion, reference, acknowledgement) ☐ Progress report (Mid-term & Final) ☐ Publication ☐ Presentation ☐ Account statement of the investigator during project ☐ Financial Utilization certificate verified by accounts
Approval Status by the Academic council after verification (Yes/No) **If No Please mention the reason for disapproval**	
Signature of the Principal Investigator	
Signature of the Mentor (If any)	
Date of Submission	

Signature of the all members of the academic council with name and date				

APPENDIX- VI

Reputed &Indexed Journal Approved by Academic Council

Date:

SI	Name of the Journal	ISSN number
1.	Indian Journal of Pharmacology	0253-7613
2.	Indian Journal of Pharmaceutical Sciences	0250-474X
3.	Indian Journal of Pharmaceutical Education and Research	0019-5464
4.	Research Journal of Pharmacy and Technology	0974-3618
5.	Journal of Applied Pharmaceutical Research	2348-0335
6.	International Journal of Drug Delivery Technology	0975-4415
7.	Research in Social and Administrative Pharmacy	1551-7411
8.	Journal of Pharmacy and Pharmaceutical Sciences	1482-1826
9.	Journal of Pharmacy and Pharmacology	2042-7158
10.	Journal of Clinical Pharmacy and Therapeutics	1365-2710
11.	International Journal of Clinical Pharmacy	2210-7703
12.	Journal of Pharmacy and Pharmacognosy Research	0719-4250
13.	International Journal of Pharmacy Practice	0961-7671
14.	International Journal of Pharmaceutical Sciences and Nanotechnology	0974-3278
15.	Journal of Advanced Pharmacy Education and Research	2249-3379
16.	Journal of Pharmacy Practice and Research	1445-937X
17.	Indonesian Journal of Pharmacy	2338-9486
18.	Journal of Research in Pharmacy	2630-6344
19.	Journal of Public Health and Pharmacy	2775-4952
20.	Indian Drugs	0019-462X
21.	International Journal of Biological Macromolecules	0141-8130
22.	International Journal of Pharmaceutics	0378-5173
23.	Indian Journal of Traditional Knowledge	0972-5938
24.	Journal of Ethnopharmacology	0378-8741
25.	Burns	0305-4179
26.	Journal of Drug Delivery Science and Technology	1773-2247
27.	Inorganic Chemistry Communications	1387-7003
28.	International Immunopharmacology	1567-5769
29.	European Polymer Journal	0014-3057
30.	Carbohydrate Polymers	0144-8617

The above journals are approved by the Academic council committee. The review of the journals indexing will be done in every 06 months. Addition and deletion of the journals will be done with the approval of the competent authority accordingly. The financial assistance will be applicable to these journals only. In case of journal beyond this annexure, corresponding author have to produce proof about the indexing before academic council. After securitization, the author will be eligible for financial assistance after the decision of the council. If at the time of publication, in case indexing of the journal beyond annexure is removed, he/she will not be eligible for any financial assistance.

Signature of the all members of the academic council with name and date				

APPENDIX-VII

Project Sanctioned Letter

Date:

This is to certify that the research project entitled: "_____ _____"

submitted by:

Principal Investigator (PI): Dr./Mr./Ms. _____

Co-Investigator(s): _____

Department: _____

has been duly scrutinized and approved by the Academic Council in its meeting held on _____ (Agenda Item No. _____).

The project is sanctioned for a period of _____ (from _____ to _____) with a total approved budget of Rs. _____ (Rupees _____ only).

The Investigator shall execute the project in accordance with the approved proposal, institutional guidelines, and applicable rules and regulations. All financial transactions shall be subject to audit and institutional norms.

This certificate is issued for official record and necessary action.

Signature of the all members of the academic council with name and date				

APPENDIX-VIII

Project Closure Certificate

Date:

This is to certify that the research project entitled: "_____" sanctioned vide Letter No. _____ dated _____, funded by _____, has been successfully completed by:

Principal Investigator (PI): Dr./Mr./Ms. _____

Co-Investigator(s): _____

Department: _____

The project was carried out for the sanctioned period from _____ to _____ with the approved budget of Rs. _____.

It is further certified that:

1. The objectives of the project have been satisfactorily achieved.
2. The research work has been completed as per the approved proposal and guidelines of the funding agency.
3. The final technical report and statement of expenditure have been submitted to the funding agency.
4. All project-related financial and administrative obligations have been duly settled.
5. No dues remain pending against the project.

The project is hereby declared **formally closed** with effect from _____.

Signatures:

Principal

Annexure-III

Program Outcomes

PO 1: Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.

PO 2: Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

PO 3: Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.

PO 4: Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

PO 5: Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.

PO 6: Professional Identity: Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).

PO 7: Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.

PO 8: Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.

PO 9: The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.

PO 10: Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 11: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

PROGRAM SPECIFIC OUTCOMES (PSOs):

PSO1: Able to apply the knowledge gained during the course of the program from pharmacology, pharmaceutics, medicinal chemistry, Pharmacognosy, APHE, communicationskills, pharmaceutical analysis, Biotechnology, biochemistry, cosmetology and environmental studies

PSO2: Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.

PSO3: Able to do multidisciplinary jobs in the pharmaceutical industries in various branches and would be able to write effective project reports in multidisciplinary environment in the context of changing technologies.

PSO4: Able to communicate easily and comfortably. Would be able to perform multitasks in multi fields including pharmaceutical & cosmetics. Research area would be strong.

Course Outcome

B. Pharmacy (I Semester)

Subject Code	Subject
BP101T	HUMAN ANATOMY AND PHYSIOLOGY-I
BP102T	PHARMACEUTICAL ANALYSIS (Theory)
BP103T.	PHARMACEUTICS- I (Theory)
BP104T	PHARMACEUTICAL INORGANIC CHEMISTRY (Theory)
BP105T	COMMUNICATION SKILLS (Theory)
BP 106RBT	REMEDIAL BIOLOGY
BP 106RMT	REMEDIAL MATHEMATICS

Subject: HUMAN ANATOMY AND PHYSIOLOGY-I **Subject Code: BP101T**

	Course Outcome
CO-01	Explain the gross morphology, structure and functions of various organs of the human body.
CO-02	Describe the various homeostatic mechanisms and their imbalances and explain coordinated working pattern of different organs of each system.
CO-03	Clarify various tissues and organs of different systems of human body.
CO-04	Describe various experiments related to special senses and nervous system.
CO-05	To identify the various tissues and organs of differentsystems of human body.
CO-06	To perform the various experiments related to special sensesand nervous system
CO-07	To describe the various homeostatic mechanisms and theirimbalances.
CO-08	To study the maintenance of normal functioning of humanbody

Subject: PHARMACEUTICAL ANALYSIS **Subject Code: BP102T**

	Course Outcome
CO-01	To study fundamentals of pharmaceutical analysis andpharmacopoeia
CO-02	Understand basic concepts involved in errors and to know the sources of impurities and methods to determine the impurities.
CO-03	Clarify need and basic principles of Acid Base titration, non aqueous titration, complexometric titration, precipitation titrations, gravimetric analysis etc for the determination of percentage purity of drugs.
CO-04	Illustrate principle, types of electrode, instrumentation and applications of Potentiometry, Conductometry and Polarography
CO-05	To gain information about the qualitative and quantitative composition of substances and species, that is to find out what a substance is composed of and exactly how much. This information guides development of the manufacturing operation and therapeutic action of drugs.
CO-06	To get acquaint to basic apparatus and instruments and their calibration. and Understand concept of various volumetric analysis
CO-07	To develop analytical skills in data interpretation andcalculations.

Subject: PHARMACEUTICS **Subject Code: BP103T**

	Course Outcome
CO-01	To Know the history of profession of pharmacy
CO-02	Understand the professional way of handling the prescription
CO-03	Understand the basics of different dosage forms,pharmaceutical incompatibilities
CO-04	To understand pharmaceutical calculations
CO-05	Understand formulation and evaluation ofPharmaceutical solution.
CO-06	Understand formulation and evaluation ofPharmaceutical dispersed system.
CO-07	Understand formulation and evaluation ofpharmaceutical powders.
CO-08	Understand formulation and evaluation of semisoliddosage form.

Subject: PHARMACEUTICAL INORGANIC CHEMISTRY **Subject Code: BP104T**

	Course Outcome
CO-01	Knowledge of sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
CO-02	Understanding of the basic concepts of acidity/basicity, buffers and tonicity applicable in pharmaceuticals
CO-03	Understanding of the medicinal and pharmaceutical Importance of inorganic compounds
CO-04	Understanding of concepts and principles of radiopharmaceuticals
CO-05	Understanding concepts regarding acidifiers and antacids
CO-06	Developed skills to perform limit test for given sample
CO-07	Perform identification of inorganic salts through various qualitative tests
CO-08	Ability to perform tests for purity for different compounds as per IP

Subject: COMMUNICATION SKILLS **Subject Code: BP105T**

	Course Outcome
CO-01	Understand the behavioral needs for Pharmacist to function effectively in the areas of pharmaceutical operation.
CO-02	Communicate effectively (Verbal and Non-verbal.
CO-03	Effectively manage the team as a team player.
CO-04	Develop interview skills
CO-05	Develop leadership qualities and essentials.
CO-06	Understand the role of communication in personal and professional life.

Subject: REMEDIAL BIOLOGY

Subject Code: BP106RBT

	Course Outcome
CO-01	Knowledge of Living world and morphology of flowering plant.
CO-02	Understanding the concept of Body fluids, digestion and respiration
CO-03	Understanding concepts regarding Human reproduction
CO-04	Understanding the unit of life and plant nutrition
CO-05	Developed skills to understand handling of Microscope
CO-06	Knowledge and skills to prepare permanent slides
CO-07	Demonstration of frog by computer model
CO-08	Performed determination of blood pressure and blood group

Subject: REMEDIAL MATHEMATICS **Subject Code: BP106RBT**

	Course Outcome
CO-01	Know the theory and their application in Pharmacy
CO-02	Solve the different types of problems by applying theory
CO-03	Appreciate the important application of mathematics in Pharmacy
CO-04	Know to solve analytical problem in Pharmacy
CO-05	Know to solve Statistical problems in Pharmacy

Course Outcome

B. Pharmacy (II Semester)

SUB. CODE	**SUBJECT**
BP201T	HUMAN ANATOMY AND PHYSIOLOGY-II
BP202T	PHARMACEUTICAL ORGANIC CHEMISTRY-I
BP203T	BIOCHEMISTRY
BP204T	PATHOPHYSIOLOGY
BP205T	COMPUTER APPLICATION IN PHARMACY
BP206T	ENVIRONMENTAL SCIENCE

Subject: HUMAN ANATOMY AND PHYSIOLOGY-II **Subject Code: BP201T**

	Course Outcome
CO-01	Explain the gross morphology, structure and functions of various organs of the human body
CO-02	Describe the various homeostatic mechanisms and their imbalance
CO-03	Explain the various tissues and organs of different systems of human body with coordinated working pattern of different organs of each system
CO-04	Explain the interlinked mechanism in the maintenance of normal functioning of human body.

Subject: PHARMACEUTICAL ORGANIC CHEMISTRY-I **Subject Code: BP202T**

	Course Outcome
CO-01	Understanding of important physical properties, general reaction and mechanism of basic reactions like substitution, elimination, addition etc and methods of preparation of various functional groups
CO-02	Knowledge of the classification , nomenclature (Common and IUPAC) & structure of organic compound
CO-03	Knowledge of isomers & type of isomerism of the organic compound
CO-04	Account for reactivity/stability of compounds and intermediates forming in reactions
CO-05	Knowledge of safety measures in organic chemistry laboratory and various laboratory techniques
CO-06	Ability to Identify/confirm the organic compounds on the basis of important identification tests like Preliminary tests, Lassaigne's & Solubility test
CO-07	Ability to prepare suitable solid derivatives from organic compounds.
CO-08	Ability to determine the important characteristic properties of organic compound like melting point and Boiling point
CO-09	Develop skills to prepare stereo models containing various functional groups

Subject: BIOCHEMISTRY **Subject Code: BP203T**

	Course Outcome
CO-01	Knowledge of Biomolecules and bioenegetics
CO-02	Understanding of the basic concepts of carbohydrate, lipids, amino acid and their metabolism.
CO-03	Understanding of the Nucleic acid metabolism and genetic information transfer.
CO-04	Understanding concepts regarding enzymes
CO-05	Developed skills to perform qualitative analysis of carbohydrates and protein
CO-06	Perform the effect of temperature and substrate concentration on salivary amylase activity
CO-07	Ability to prepare buffer system and measurement of pH
CO-08	Knowledge and skills to determine blood sugar

Subject: PATHOPHYSIOLOGY **Subject Code: BP204T**

	Course Outcome
CO-01	Describe the etiology and pathogenesis of the selecteddisease states
CO-02	Describe the signs and symptoms of the diseases
CO-03	Explain the complications of the diseases

Subject: COMPUTER APPLICATION IN PHARMACY **Subject Code: BP205T**

	Course Outcome
CO-01	Basic and advanced Knowledge of computer
CO-02	Knowledge of Hardware and Software
CO-03	Knowledge of the various types of application of computer in pharmacy.
CO-04	Knowledge of the various types Database and its uses in pharmacy
CO-05	Knowledge of the various Application of Databases in pharmacy
CO-06	Knowledge of the various Application software that are used in different department of pharmacy

Subject: ENVIRONMENTAL SCIENCE **Subject Code: BP206T**

	Course Outcome
CO-01	Student should be able to Create the awareness about environmental problems among learners.
CO-02	Student should be able to Impart basic knowledge about the environment and its allied problems.
CO-03	Student should be able to Develope an attitude of concern for environment.
CO-04	Student should be able to Motivate learner to participate in environment protection and environment improvement.
CO-05	Student should be able to Acquire skills to help the concerned individuals in identifying and solving environmental problems.
CO-06	Student should be able to Strive to attain harmony with nature.

Course Outcome

B. Pharmacy (III Semester)

SUB. CODE	**SUBJECT**
BP301T	PHARMACEUTICAL ORGANIC CHEMISTRY-II
BP302T	PHYSICAL PHARMACEUTICS-I
BP303T	PHARMACEUTICAL MICROBIOLOGY
BP304T	PHARMACEUTICAL ENGINEERING

SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY-II **SUBJECT CODE: BP301T**

	Course Outcome
CO-01	Understand the introduction, orbital picture, resonance, and effects of substituent's on further substitution on benzene
CO-02	Write the structure, name and medicinal use of concerned organic compounds in the course
CO-03	Special emphasis on mechanisms and orientation of chemical reactions of organic compounds
CO-04	Explain acidity, effect of substituents, and qualitative test of phenols & Aromatic acids. Also elucidate basicity, effect of substituent's, of aromatic amines
CO-05	Understand the chemistry of fatty acids. Also covers theoretical and practical knowledge of significance, principle and determination of important analytical constants of fats and oils
CO-06	Knowledge of synthesis and reactions polynuclear hydrocarbons.
CO-07	Explain the reactions and important theories explains reactivity and stability of cycloalkanes
CO-08	Demonstration of recrystallization and Steam distillation
CO-09	Determine the analytical constants of oil/fat sample
CO-10	Synthesize the different organic compounds and understand the reaction mechanisms

SUBJECT: PHYSICAL PHARMACEUTICS-I **SUBJECT CODE: BP302T**

	Course Outcome
CO-01	Recognize the Solubility phenomenon, factor influencing the solubility, diffusion principles in biological system, phase rule and applications of distribution law
CO-02	Understand the different matter properties, physical and chemical properties of the drugs molecules with their application
CO-03	Distinguish the concept of surface tension and interfacial tension between different states, adsorption of liquid and gas on adsorbate.
CO-04	Distinguish the principles of complexation/ protein binding; know the types of complexation with their application
CO-05	Understand the role of pH and buffer in the dosage forms

SUBJECT: PHARMACEUTICAL MICROBIOLOGY **SUBJECT CODE: BP303T**

	Course Outcome
CO-01	Understand methods of identification, cultivation and preservation of various microorganisms
CO-02	To understand the importance and implementation of sterilization in pharmaceutical processing and industry
CO-03	Learn sterility testing of pharmaceutical products
CO-04	Carried out microbiological standardization of Pharmaceuticals.
CO-05	To understand the importance and implementation and evaluation of disinfectant in pharmaceutical industry
CO-06	Understand the cell culture technology and its applications in pharmaceutical industries
CO-07	Understand methods of clean area and aseptic area classification
CO-08	Knowledge and working of laminar air flow bench

Subject: PHARMACEUTICAL ENGINEERING **Subject Code: BP304T**

	Course Outcome
CO-01	To know various unit operations used in Pharmaceutical industries, understand the material handling techniques
CO-02	To perform various processes involved in pharmaceutical manufacturing process, carry out various tests to prevent environmental pollution
CO-03	To appreciate and comprehend significance of plant lay out design for optimum use of resources
CO-04	To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries

Course Outcome

B. Pharmacy (IV Semester)

SUB. CODE	SUBJECT
BP401T	PHARMACEUTICAL ORGANIC CHEMISTRY-III
BP402T.	MEDICINAL CHEMISTRY – I
BP403T.	PHYSICAL PHARMACEUTICS-II (
BP404T.	PHARMACOLOGY-I
BP405T.	PHARMACOGNOSY AND PHYTOCHEMISTRY I

SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY-III **SUBJECT CODE:** BP401T

	Course Outcome
CO-01	Understand the introduction, orbital picture, resonance, reactions and effects of substituent's of benzene. Explain acidity, effect of substituents, reaction and qualitative test of phenols. Also elucidate basicity, effect of substituents, reaction of aromatic amines
CO-02	Knowledge of synthesis, reactions and structure and medicinal uses of some polynuclear hydrocarbons
CO-03	Understand the theory of cycloalkanes and chemistry of fats and oils.
CO-04	Explain the optical isomerism and geometrical isomerism of organic compounds. Clarify the concept of resolution of racemic modifications

SUBJECT: MEDICINAL CHEMISTRY – I **SUBJECT CODE:** BP402T

	Course Outcome
CO-01	Explain the influence of physicochemical properties on drug action.
CO-02	Define; explain types and applications of bioisosterism
CO-03	Discuss receptor types and forces involved in drug receptor interactions
CO-04	Explain the influence of the metabolic profile of drugs and their impact on biological system
CO-05	Outline the synthetic route for the selective medicinal compounds of each category and acquire knowledge on the mechanism of action of pharmacodynamics agents.
CO-06	Assimilate the therapeutic uses of adrenergic agents, cholinergic Agents and CNS agent's classification, synthesis and therapeutic uses and side effects of drugs.
CO-07	Discuss the relationship between the structures activity of medicinal compounds and their biological activity
CO-08	Understand how to improve drug efficiency & effectively with minimum adverse effect & side effects
CO-09	Draw the reaction mechanism involved in the synthesis of compounds
CO-10	Perform the procedure of purification and physical characterization of synthesized Compound
CO-11	Understand how to improve drug efficiency & effectively with minimum adverse effect & side effects
CO-12	Instrument handling & use modern method for designing for new drug.

SUBJECT: PHYSICAL PHARMACEUTICS-II **SUBJECT CODE:** BP403T

	Course Outcome
CO-01	Relate various physicochemical properties of drug and excipient molecules in designing the dosage forms
CO-02	Distinguish the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations
CO-03	Demonstrate use of physicochemical properties in evaluation of dosage forms
CO-04	Understand physicochemical properties of drug molecules in formulation, research and development
CO-05	Gain the knowledge of particle size analysis and surface area determination methods
CO-06	Determine viscosity of fluids and study application of itto colloid stability
CO-07	Apply the knowledge of chemical kinetics in drugsstability
CO-08	To understand the stability of sols
CO-09	To Determine powder flow properties

SUBJECT: PHARMACOLOGY-I **SUBJECT CODE:** BP404T

	Course Outcome
CO-01	Understand the pharmacological actions of different categories of drugs
CO-02	Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels
CO-03	Apply the basic pharmacological knowledge in the prevention and treatment of various diseases
CO-04	Observe the effect of drugs on animals by simulated experiments
CO-05	Observe the effect of drugs on animals by simulated experiments
CO-06	Appreciate correlation of pharmacology with other bio medical science

SUBJECT: PHARMACOGNOSY AND PHYTOCHEMISTRY I **SUBJECT CODE:** BP405T

	Course Outcome
CO-01	Comprehend and explain Primary and secondary metabolites from source to their industrial applications.
CO-02	Explain meaning & significance of Pharmacognostic parameters and pharmacognostic scheme of study of crude drugs.
CO-03	Explain properties, methods of extraction, pharmaceutical and industrial applications of carbohydrates, lipids and proteins and theirderived products.
CO-04	Explain properties, methods of extraction, and systematic pharmacognostic study of crude drugs from Glycosides and Tannins.
CO-05	Able to understand morphology, microscopy and powdercharacteristics of crude drugs.
CO-06	Able to identify unorganized drugs by chemical methods
CO-07	Able to determine the quality of unorganized crude drugs
CO-08	Able to conduct extraction and estimation of differentphytoconstituents.

Course Outcome

B. Pharmacy (V Semester)

Sub. Code	Subject
BP501T	MEDICINAL CHEMISTRY – II
BP502T.	INDUSTRIAL PHARMACY-I
BP503T.	PHARMACOLOGY-II
BP504T.	PHARMACOGNOSY AND PHYTOCHEMISTRY II
BP505T.	PHARMACEUTICAL JURISPRUDENCE

SUBJECT: MEDICINAL CHEMISTRY – II **SUBJECT CODE: BP501T**

	Course Outcome
CO-01	Classify medicinal compounds according to their chemical structure.
CO-02	Identify the effect of physicochemical properties on biological action and drug metabolic pathways.
CO-03	Explain the mode of action, synthesis and therapeutic uses and side effects of drugs.
CO-04	Discuss the relationship between the structures of medicinal compounds and their biological activity.
CO-05	Discuss the pharmacological actions and adverse effects of medicinal compounds.
CO-06	Apply the principles of synthetic chemistry to predict the synthesis of drug molecules.
CO-07	Knowledge & skill to operate Auto-Dock & Molegro software for designing of new drug structure, chemistry & therapeutic value of drugs.
CO-08	Understand how to improve drug efficiency & effectively with minimum adverse effect & side effects.
CO-09	Knowledge and skills to prepare in organic salts-boric acid ,potash alum and ferrous sulphate.
CO-10	Being a public survey to interact with the medical pharmacist in a better way to understand recent marked product and complain of people to make them feel healthy.
CO-11	Leadership skills: Performing practical in a group.

SUBJECT: INDUSTRIAL PHARMACY-I **SUBJECT CODE: BP502T**

	Course Outcome
CO-01	Know the various pharmaceutical dosage forms and their manufacturing techniques
CO-02	Know various considerations in development of pharmaceutical dosage forms
CO-03	Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality
CO-04	Describe tablets dosage form, physico-chemical principles, different additives used for formulation, manufacturing, evaluation and defect in tableting with remedies.
CO-05	Describe capsule dosage form. Explain the different types, additives, size selection, manufacturing, evaluation, equipment and defect of capsules.
CO-06	Explain pharmacopoeial specification. Explain requirement of coating, techniques & Equipment used in tablet coating.
CO-07	Able to perform preformulation studies of tablets andcapsule
CO-08	Understand the knowledge to formulate, evaluate and label of tablets and capsules

SUBJECT: PHARMACOLOGY-II **SUBJECT CODE: BP503T**

	Course Outcome
CO-01	Understand the guidelines for animal experimentations and develop skills of various routes of drug administration, methods for blood collection from experimental animals.
CO-02	Learn the composition of physiological salt solutions and basic instruments used in experimental pharmacology.
CO-03	Perform experiments using various isolated preparation and the effects of different drugs on the concentration response curves.
CO-04	Study the action of various drugs using preclinical models/computer simulations.
CO-05	To understand the use of isolated tissue preparation for antagonistic bioassay methods.
CO-06	Demonstrate isolation of different organ/tissue from the laboratory animal by simulated experiments.
CO-07	Demonstrate the various receptor action using isolated tissue preparation.
CO-08	Appreciate correlation of pharmacology with related medical sciences.

SUBJECT: PHARMACOGNOSY AND PHYTOCHEMISTRY II SUBJECT CODE: BP504T

	Course Outcome
CO-01	Understand and explain how the secondary metabolites are produced in crude drug from biosynthetic pathways and its investigation by radioactive isotopes.
CO-02	Understand and explain how to isolate, identified and produced various Phytochemical industrially.
CO-03	Explain properties, methods of extraction, chemical class, pharmaceutical and industrial applications of cardiac glycosides, alkaloids, volatile oil and Flavonoids and their derived products.
CO-04	Understand and explain various physical, chemical, spectroscopical and chromatography methods used incharacterization and determination of carbon skeleton of natural products.
CO-05	Comprehend & explain underlying principle, various methods of extraction processes and applications.
CO-06	Able to understand morphology, microscopy and powder characteristics of crude drugs.
CO-07	Able to conduct extraction and estimation of differenent phytoconstituents.
CO-08	Able to perform Isolation and detection of Phytoconstituents of Volatile Oils, Alkaloids and Glycosides.

SUBJECT: PHARMACEUTICAL JURISPRUDENCE SUBJECT CODE: BP505T

	Course Outcome
CO-01	Illuminate relevance and significance of jurisprudence to pharmaceutical Sciences.
CO-02	Fundamentals of legislation to regulate import manufacture, distribution and sales of drug and cosmetics
CO-03	Brief study of legislation
CO-04	Concepts of intellectual property right patent system, drugregulatory affairs etc.

Course Outcome

B. Pharmacy (VI Semester)

Sub. Code	Subject
BP601T	MEDICINAL CHEMISTRY – III
BP602T	PHARMACOLOGY-III
BP603T	HERBAL DRUG TECHNOLOGY
BP604T	BIOPHARMACEUTICS AND PHARMACOKINATICS
BP605T	PHARMACEUTICAL BIOTECHNOLOGY
BP606T	PHARMACEUTICAL QUALITY ASSURANCE

SUBJECT: MEDICINAL CHEMISTRY – III **SUBJECT CODE:** BP601T

	Course Outcome
CO-01	Understand the importance of the drug design and different techniques of drug design.
CO-02	Understand the chemistry of drug with respect to their biological activity.
CO-03	Know the metabolism, adverse effects and therapeutic value of drugs.
CO-04	Know the Importance of SAR
CO-05	Know the preaparation of medicinally important compound**.**
CO-06	Understand the CADD and software for drawing structure, analyze the different properties of drug.

SUBJECT: PHARMACOLOGY-III **SUBJECT CODE:** BP602T

	Course Outcome
CO-01	Describe the pharmacology and pharmacotherapy of various general and local anesthetics.
CO-02	Illustrate the appropriate drug therapy and management of patients with specific CNS disorders.
CO-03	Explain the indications, mechanism of action, adverse effects and contraindications for the major classes of drugs used in the treatment of Parkinson's Disease, Migraine and Alzheimer's disease.
CO-04	Describe Pharmacological features of different classes of NSAIDs and pharmacotherapy of Rheumatoid Arthritis, Osteoarthritis and Gout.
CO-05	Understand the basic principles of bioassay, types of bioassay along with advantages and disadvantages.
CO-06	Perform isolated experiments using various isolated preparation and the effect of different drugs on the concentration response curves.
CO-07	Study the preclinical screening of various drugs.

SUBJECT: HERBAL DRUG TECHNOLOGY **SUBJECT CODE:** BP603T

	Course Outcome
CO-01	Understand and explain concept of health & pathogenesis, philosophical basis, diagnosis and treatment aspects of Ayurveda, Unani, Siddha and Homeopathic system of medicine.
CO-02	Understand & explain method of preparation of Ayurvedic dosage forms; significance of novel drug delivery of natural products; herbs used in cosmetic preparation & methods of their formulations.
CO-03	Compare and contrast nutraceuticals and functional foods and understand their significance.
CO-04	Understand and explain methods of herbal drug analysis, Quality control parameter as per WHO guidelines.
CO-05	Understand and realize the significance of natural products in daily life and be able to classify different segments in market, demand and supply position; export and import potential and position of Indian herbal drug industry in global contest.
CO-06	Comprehend and explain government organizations and policies for promotion, their regulation in India & other countries, various regulatory guidelines, patenting and ethical issues etc.
CO-07	Understand and explain safe use of natural products, possible toxicities & interaction, toxicities in most venerable group (elderly patients) and significance of pharmacovigilance systems.

SUBJECT: BIOPHARMACEUTICS AND PHARMACOKINATICS **SUBJECT CODE:** BP604T

	Course Outcome
CO-01	Understand the concept of biopharmaceutics and its applications in product development. Understand the concept of ADME of drug in human body
CO-02	Learning the concepts of bioavailability and bioequivalence studies. Determine the various pharmacokinetic parameters from either plasma concentration or urinary excretion data for drug.
CO-03	Study the pharmacokinetic processes and their relevance in efficacy of dosage form.
CO-04	Learning various compartmental models.
CO-05	Understand the concept and mechanisms of dissolution and correlation.

SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY **SUBJECT CODE:** BP605T

	Course Outcome
CO-01	Understanding the importance of Immobilized enzymes in Pharmaceutical Industries
CO-02	Genetic engineering applications in relation to production of pharmaceuticals
CO-03	Importance of Monoclonal antibodies in Industries
CO-04	Appreciate the use of microorganisms in fermentation technology

SUBJECT: PHARMACEUTICAL QUALITY ASSURANCE **SUBJECT CODE:** BP606T

	Course Outcome
CO-01	The students understand the importance of quality in pharmaceutical products and importance of Good practices of GMP.
CO-02	The process involved in manufacturing of pharmaceuticals different section/department and activity is learnt.
CO-03	The students is explored the quality control environment and understand the good laboratory practices.
CO-04	The various documentation processes is highlighted to the student.
CO-05	The student understand the concept and implementation validation.

Course Outcome

B. Pharmacy (VII Semester)

Sub. Code	Subject
BP701T	INSTRUMENTAL METHOD OF ANALYSIS
BP702T	INDUSTRIAL PHARMACY-II
BP703T	PHARMACY PRACTICE
BP704T	NOVEL DRUG DELIVERY SYSTEM

SUBJECT: INSTRUMENTAL METHOD OF ANALYSIS **SUBJECT CODE:** BP701T

	Course Outcome
CO-01	Understand the interaction of matter with electromagnetic radiation and its applications in drug analysis
CO-02	Understand the chromatographic separation and analysis of drug.
CO-03	Perform the quantitative & qualitative analysis of drugs using various analytical instruments
CO-04	Demonstrate knowledge of sampling methods for all states of matter.
CO-05	Give the knowledge of sophisticated instruments used for the testing of biological like: Blood serum, Urine.
CO-06	Emphasis the validation and calibration of Pharma analytical instruments used in Quality control of drugs.
CO-07	Understanding principle, instrumentation and applications of IR, UV, HPLC and concept of automated method of analysis
CO-08	Assess sources of errors including impurities in chemical analysis and account for errors in data analysis
CO-09	Optimize the method for the development of analytical method for the determination of API.
CO-10	Understand and able to apply the theory and operational principles of analytical instruments

SUBJECT: INDUSTRIAL PHARMACY-II **SUBJECT CODE:** BP702T

	Course Outcome
CO-01	Discuss the process of pilot plant scale up of pharmaceutical dosage forms.
CO-02	Demonstrate the practice and the process of technology transfer from lab scale to commercial.
CO-03	Explain the different laws and acts that regulate pharmaceutical industry.
CO-04	Describe the approval process and regulatory requirements of drug products.
CO-05	Describe the common measure use in quality.
CO-06	Describe the role and responsibility of regulatory agencies in the approval of drugs.
CO-07	Describe the organization and responsibilities of national and state licensing authority.

SUBJECT: PHARMACY PRACTICE **SUBJECT CODE:** BP703T

	Course Outcome
CO-01	To understand various drug distribution methods in a hospital
CO-02	To understand the Pharmacy stores management and inventory control.
CO-03	To know how to monitor drug therapy of patient through medication chart review and clinical review.
CO-04	To understand how to counsel the patients.
CO-05	Detect and assess the adverse drug reactions and how to report them.
CO-06	Learn to interpret selected laboratory results.
CO-07	Role and duty of Pharmacist in health sector and public sector
CO-08	Learn to take active participation in PTC meetings and Hospital formulary system

SUBJECT: NOVEL DRUG DELIVERY SYSTEM **SUBJECT CODE:** BP704T

	Course Outcome
CO-01	To understand various approaches for development of novel drug delivery systems.
CO-02	To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems.
CO-03	Study of Microencapsulation, its Techniques & Applications.
CO-04	Study of Gastroretentive formulations.
CO-05	Evaluation Study of Modified Drug Release Systems
CO-06	Study of formulation and processing of therapeutic aerosols
CO-07	Study of Targeted, Nasopulmonary & Transdermal drug delivery system.
CO-08	Study of evaluation of marketed preparations.

Course Outcome

B. Pharmacy (VIII Semester)

Sub. Code	**Subject**
BP801T	BIOSTATISITCS AND RESEARCH METHODOLOGY
BP802T	SOCIAL AND PREVENTIVE PHARMACY
BP803T	COSMETICS SCIENCE
BP804T	PHARMACEUTICAL PRODUCT DEVELOPMENT

SUBJECT: BIOSTATISITCS AND RESEARCH METHODOLOGY SUBJECT CODE: BP801T

	Course Outcome
CO-01	To understand the applications of Biostatics in Pharmacy
CO-02	Know the operation of M.S. Excel, SPSS, R and MINITAB® , DoE (Design of Experiment)
CO-03	Know the various statistical techniques to solve statistical problems
CO-04	Appreciate statistical techniques in solving the problems**.**
CO-05	Hypothesis testing for research

SUBJECT: SOCIAL AND PREVENTIVE PHARMACY SUBJECT CODE: BP802T

	Course Outcome
CO-01	Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide.
CO-02	Have a critical way of thinking based on current healthcare development.
CO-03	Evaluate alternative ways of solving problems related to health and pharmaceutical issues.
CO-04	To understand different preventive medicines and national health programs.

SUBJECT: PHARMACEUTICAL PRODUCT DEVELOPMENT SUBJECT CODE: BP804T

	Course Outcome
CO-01	To study regulations related to preformulation, formulation development, stability assessment
CO-02	Knowledge about quality control testing of different types of dosage forms
CO-03	An advanced study of Pharmaceutical Excipients in pharmaceutical product development
CO-04	Advanced study of Pharmaceutical Excipients used in different dosage forms in pharmaceutical product development
CO-05	Study of various optimization techniques for pharmaceutical product development
CO-06	Knowledge about Selection and quality control testing of packaging materials for pharmaceutical product development
CO-07	Study of Quality by Design and its application in pharmaceutical product development.

Course outcome with program outcome
M. Pharmacy (Pharmaceutical Chemistry-I semester)

Subject code	Subject
MPC101	Modern Pharmaceutical Analytical techniques
MPC102	Advanced Organic chemistry-I
MPC103	Advanced Medicinal chemistry
MPC104	Chemistry of Natural products

Subject: Modern Pharmaceutical Analytical techniques **Subject Code: MPC101**

	Course Outcome
CO-01	Analytical instrumental techniques for identification, characterization and quantification of drugs
CO-02	The analysis of various drugs in single and combination dosage forms
CO-03	Theoretical and practical skills of the instruments like UV, IR, MASS etc
CO-04	The analysis of various Chemicals and Excipients

Subject: Advanced Organic chemistry-I **Subject Code: MPC102**

	Course Outcome
CO-01	To provide in-depth knowledge about advances in organic chemistry, different techniques of organic synthesis and their applications to process chemistry as well as drug discovery
CO-02	To understand the principles and applications of reterosynthesis
CO-03	To understand the mechanism & applications of various named reactions
CO-04	To understand the concept of disconnection to develop synthetic routes for small target molecule
CO-05	To understand the various catalysts used in organic reactions
CO-06	To understand the chemistry of heterocyclic compounds

Subject: Advanced Medicinal chemistry **Subject Code: MPC103**

	Course Outcome
CO-01	To impart knowledge about recent advances in the field of medicinal chemistry at the molecular level including different techniques for the rational drug design.
CO-02	To understand the Different stages of drug discovery
CO-03	To understand the Role of medicinal chemistry in drug research
CO-04	To understand the Different techniques for drug discovery
CO-05	To understand the Various strategies to design and develop new drug like molecules for biological targets
CO-06	To understand the Peptidomimetics

Subject: Chemistry of Natural products **Subject Code: MPC104**

	Course Outcome
CO-01	To provide detail knowledge about chemistry of medicinal compounds from natural origin and general methods of structural elucidation of such compounds
CO-02	To understand the isolation, purification and characterization of medicinal compounds from natural origin.
CO-03	To understand the Different types of natural compounds and their chemistry and medicinal importance
CO-04	To understand the importance of natural compounds as lead molecules for new drug discovery
CO-05	To understand the concept of rDNA technology tool for new drug discovery

Course outcome with program outcome
M. Pharmacy (Pharmaceutical Chemistry II semester)

Subject code	Subject
MPC201	**Advanced spectral analysis**
MPC202	**Advanced Organic chemistry-II**
MPC203	**Computer Aided Drug Design**
MPC204	**Pharmaceutical Process Chemistry**

Subject:Advanced spectral analysis **Subject Code: MPC201**

	Course Outcome
CO-01	To understand the hyphenated analytical instrumental techniques for identification, characterization and quantification of drugs.
CO-02	To understand the Interpretation of the NMR, Mass and IR spectra of various organic compounds
CO-03	To understand the Theoretical and practical skills of the hyphenated instruments
CO-04	To understand the Identification of organic compounds

Subject: Advanced Organic chemistry-II **Subject Code: MPC202**

	Course Outcome
CO-01	To provide in-depth knowledge about advances in organic chemistry, different techniques of organic synthesis and their applications to process chemistry as well as drug discovery
CO-02	To understand the principles and applications of Green chemistry
CO-03	To understand the concept of peptide chemistry
CO-04	To understand the various catalysts used in organic reactions
CO-05	To understand the concept of stereochemistry and asymmetric synthesis

Subject: Computer Aided Drug Design **Subject Code: MPC203**

	Course Outcome
CO-01	To impart knowledge on the current state of the art techniques involved in computer assisted drug design.
CO-02	To understand the Role of CADD in drug discovery
CO-03	To understand the Different CADD techniques and their applications
CO-04	To understand the Various strategies to design and developnew drug like molecules.
CO-05	To understand the Working with molecular modeling softwares to design new drug molecules
CO-06	To understand the in silico virtual screening protocols

Subject: Pharmaceutical Process Chemistry **Subject Code: MPC204**

	Course Outcome
CO-01	The goal of a process chemist is to develop synthetic routes that are safe, cost-effective, environmentally friendly, and efficient
CO-02	To impart knowledge on the development and optimization of a synthetic route/s and the pilot plant procedure for the manufacture of Active Pharmaceutical Ingredients (APIs) and new chemical entities (NCEs) for the drug development phase.
CO-03	To understand the strategies of scale up process of APIs and intermediates
CO-04	To understand the various unit operations and various reactions in process chemistry

Course outcome with program outcome
M. Pharmacy (Pharmaceutics I semester)

Subject code	Subject
MPH101	Modern Pharmaceutical Analytical techniques
MPH102	Drug delivery systems
MPH103	Modern pharmaceutics
MPH104	Regulatory affairs

Subject: Modern Pharmaceutical Analytical techniques **Subject Code: MPH101**

	Course Outcome
CO-01	Analytical instrumental techniques for identification, characterization and quantification of drugs
CO-02	The analysis of various drugs in single and combination dosage forms
CO-03	Theoretical and practical skills of the instruments like UV, IR, MASS etc
CO-04	The analysis of various Chemicals and Excipients

Subject:Drug delivery systems **Subject Code: MPH102**

	Course Outcome
CO-01	This course is designed to impart knowledge on the area of advances in novel drug delivery systems
CO-02	The various approaches for development of novel drug delivery systems.
CO-03	The criteria for selection of drugs and polymers for the development of delivering system
CO-04	The formulation and evaluation of Novel drug delivery systems

Subject: Modern pharmaceutics **Subject Code: MPH103**

	Course Outcome
CO-01	The student understands the concept of preformulation studies and learns the Optimization techniques for Pharmaceutical Formulation.
CO-02	The Student recognizes the Validation concept with different guidelines.
CO-03	The student understands the Industrial Management, total quality managements and GMP Considerations as per regulatory norms.
CO-04	The student learn the science of compression and compaction with impacting factors.
CO-05	The students understand the implementation of different consolidation parameters at product development stage.

Subject: Regulatory affairs **Subject Code: MPH104**

	Course Outcome
CO-01	To impart advanced knowledge and skills required to learn the concept of generic drug and their development, various regulatory filings in different countries, filing process of IND, NDA and ANDA
CO-02	To know the chemistry, manufacturing controls and their regulatory importance
CO-03	To learn the documentation requirements for the approval process and Submission of global documents in CTD/ eCTD formats
CO-04	The Regulatory guidance's and guidelines for filing and approval process
CO-05	Post approval regulatory requirements for actives and drug products
CO-06	Clinical trials requirements for approvals for conducting clinical trials

Course outcome with program outcome
M. Pharmacy (Pharmaceutics II semester)

Subject code	Subject
MPH201	Molecular Pharmaceutics (Nano Technology & Targeted DDs) (NTDS)
MPH202	Advanced Biopharmaceutics& Pharmacokinetics
MPH203	Computer Aided Drug Development
MPH204	Cosmetics and Cosmeceuticals

Subject: Molecular Pharmaceutics (NTDS) **Subject Code: MPH201**

	Course Outcome
CO-01	To impart knowledge on the area of advances in novel drug delivery systems.
CO-02	The various approaches for development of novel drug delivery systems
CO-03	The criteria for selection of drugs and polymers for the development of NTDS
CO-04	The formulation and evaluation of novel drug delivery systems

Subject:Advanced Biopharmaceutics& Pharmacokinetics **Subject Code: MPH202**

	Course Outcome
CO-01	To impart knowledge and skills necessary for dose calculations, dose adjustments
CO-02	To apply biopharmaceutics theories in practical problem solving.
CO-03	The use raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination.
CO-04	The critical evaluation of biopharmaceutic studies involving drug product equivalency.
CO-05	The design and evaluation of dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters.
CO-06	The potential clinical pharmacokinetic problems and application of basics of pharmacokinetic

Subject: Computer Aided Drug Development **Subject Code: MPH203**

	Course Outcome
CO-01	The student understand the impact of Computers in Pharmaceutical Research and Development
CO-02	The Student understands the Computational Modeling for ADME.
CO-03	The student understands the role of computer aided application in formulation developments.
CO-04	The student learns the implementation of computer simulation in Biopharmaceutics and clinical developments.
CO-05	The students understand the importance of artificial intelligence, (AI), Robotics and Computational fluid dynamics (CFD).

Subject: Cosmetics and Cosmeceuticals **Subject Code: MPH204**

	Course Outcome
CO-01	To impart knowledge and skills necessary for the fundamental need for cosmetic and cosmeceutical products
CO-02	To understand key ingredients used in cosmetics and cosmeceuticals
CO-03	To understand Key building blocks for various formulations
CO-04	To understand Current technologies in the market
CO-05	To understand basic science to develop and evaluation of cosmetics and cosmeceuticals
CO-06	Scientific knowledge to develop cosmetics and 78osmaceuticals with desired Safety, stability, and efficacy.
CO-07	To know about regulatory requirements related to cosmetics

Attainment of Course outcome with program outcome
M. Pharmacy (Pharmaceutical Chemistry-I semester)

Course Outcome	Program Outcome (PO)											
(MPC101T)	1	2	3	4	5	6	7	8	9	10	11	12
Analytical instrumental techniques for identification, characterization and quantification of drugs	H	H	M	H								M
The analysis of various drugs in single and combination dosage forms	H	H	H	H						M		M
Theoretical and practical skills of the instruments like UV, IR, MASS etc	H	H	M	H						M		M
The analysis of various Chemicals and Excipients	H	H	M	M	L							M

Course Outcome	Program Outcome (PO)											
MPC102T	1	2	3	4	5	6	7	8	9	10	11	12
To provide in-depth knowledge about advances in organic chemistry, different techniques of organic synthesis and their applications to process chemistry as well as drug discovery	H	H	M	H				H	P	H		H
To understand the principles and applications of reterosynthesis	H	H	M	H				M	M	H		M
To understand the mechanism & applications of various named reactions	H		M	H				M	M	H		H
To understand the concept of disconnection to develop synthetic routes for small target molecule	H	H	M	H				M		H		H
To understand the various catalysts used in organic reactions	H	H	M	H				M	P	H		H
To understand the chemistry of heterocyclic compounds	H	H	L	H				M		H		H

Course Outcome	Program Outcome (PO)											
MPC103T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To impart knowledge about recent advances in the field of medicinal chemistry at the molecular level including different techniques for the rational drug design.	H	H	M	H				H	L	H		H
To understand the Different stages of drug discovery	H	H	M	H				M	M	H		M
To understand the Role of medicinal chemistry in drug research	H		M	H				M	M	H		H
To understand the Different techniques for drug discovery	H	H	M	H				M		H		H
To understand the Various strategies to design and develop new drug like molecules for biological targets	H	H	M	H				M	L	H		H
To understand the Peptidomimetics	H	H	L	H				M		H		H

Course Outcome	Program Outcome (PO)											
MPC104T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To provide detail knowledge about chemistry of medicinal compounds from natural origin and general methods of structural elucidation of such compounds	H	H	M	H	M	M	L	L	M	H	H	M
To understand the isolation, purification and characterization of medicinal compounds from natural origin.	M	H	H	H	L	L			H	H	M	L
To understand the Different types of natural compounds and their chemistry and medicinal importance	H	M	L		H	H	M	M	H	M	M	
To understand the importance of natural compounds as lead molecules for new drug discovery	H	H	M	L		H	M	M	M	M	L	
To understand the concept of rDNA technology tool for new drug discovery	M	M	M	M	M				M	H	M	M

Attainment of Course outcome with program outcome
M. Pharmacy (Pharmaceutical Chemistry II semester)

Course Outcome	Program Outcome (PO)											
MPC201T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To understand the hyphenated analytical instrumental techniques for identification, characterization and quantification of drugs.	H	H	H	H	L			L		H		H
To understand the Interpretation of the NMR, Mass and IR spectra of various organic compounds	H	H	H	H	L			L		H		H
To understand the Theoretical and practical skills of the hyphenated instruments	H	H	H	H	L			L		H		H
To understand the Identification of organic compounds	H	H	H	H				L		H		

Course Outcome	Program Outcome (PO)											
MPC202T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To provide in-depth knowledge about advances in organic chemistry, different techniques of organic synthesis and their applications to process chemistry as well as drug discovery	H	H	H	H				H	M	H		H
To understand the principles and applications of Green chemistry	H	H	H	H				H	M	H		H
To understand the concept of peptide chemistry	H	H	M	H				M		H		H
To understand the various catalysts used in organic reactions	H	M	M	H				M		H		H
To understand the concept of stereochemistry and asymmetric synthesis	H	H	M	H				M		H		H

Course Outcome	Program Outcome (PO)											
MPC203T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To impart knowledge on the current state of the art techniques involved in computer assisted drug design.	H	H	H	M						H		
To understand the Role of CADD in drug discovery	H	H	M	M						H		M
To understand the Different CADD techniques and their applications	H	H	H	H						H		H
To understand the Various strategies to design and developnew drug like molecules.	H	H	H	H						H		M
To understand the Working with molecular modeling softwares to design new drug molecules	H	H	H	M						H		M
To understand the in silico virtual screening protocols	H	H	H	M						H		

Course Outcome	Program Outcome (PO)											
(MPC204T)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
The goal of a process chemist is to develop synthetic routes that are safe, cost-effective, environmentally friendly, and efficient	H	H	H	H	H	H	H	L	L	H	H	H
To impart knowledge on the development and optimization of a synthetic route/s and the pilot plant procedure for the manufacture of Active Pharmaceutical Ingredients (APIs) and new chemical entities (NCEs) for the drug development phase.	H	H	H	H	L	H	L	H	L	H	H	H
To understand the strategies of scale up process of apis and intermediates	H	H	H	L	L	L	H	H	H	L	H	H
To understand the various unit operations and various reactions in process chemistry	H	H	H	H	L	L	L	L	L	H	H	H

Attainment of Course outcome with program outcome
M. Pharmacy (Pharmaceutics I semester)

Course Outcome	Program Outcome (PO)											
(MPH101T)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Analytical instrumental techniques for identification, characterization and quantification of drugs	H	H	M	H								M
The analysis of various drugs in single and combination dosage forms	H	H	H	H						M		M
Theoretical and practical skills of the instruments like UV, IR, MASS etc	H	H	M	H						M		M
The analysis of various Chemicals and Excipients	H	H	M	M	L							M

Course Outcome	Program Outcome (PO)											
MPH102T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
This course is designed to impart knowledge on the area of advances in novel drug delivery systems	H	H	M	H	M	M	L	H	H	H	M	L
The various approaches for development of novel drug delivery systems.	H	H	H	H	M	L	L	M	M	H	L	L
The criteria for selection of drugs and polymers for the development of delivering system	H	H	H	L	L	L	L	L	M	M	L	L
The formulation and evaluation of Novel drug delivery systems	H	H	M	H	M	H	L	H	H	H	M	H

Course Outcome	Program Outcome (PO)											
MPH103T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
The student understands the concept of preformulation studies and learns the Optimization techniques for Pharmaceutical Formulation.	H	M	H	M						H		
The Student recognizes the Validation concept with different guidelines.	H		H	H						H		
The student understands the Industrial Management, total quality managements and GMP Considerations as per regulatory norms.	H						H	L	H	H		M
The student learn the science of compression and compaction with impacting factors.	H	M		M						H		
The students understand the implementation of different consolidation parameters at product development stage.	H	H								H		

Course Outcome	Program Outcome (PO)											
MPH104T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To impart advanced knowledge and skills required to learn the concept of generic drug and their development, various regulatory filings in different countries, filing process of IND, NDA and ANDA	H		L		M					H		
To know the chemistry, manufacturing controls and their regulatory importance	H	M	M							H		
To learn the documentation requirements for the approval process and Submission of global documents in CTD/ eCTD formats	H				M					H		
The Regulatory guidance's and guidelines for filing and approval process	H				M					H		
Post approval regulatory requirements for actives and drug products	H									H		
Clinical trials requirements for approvals for conducting clinical trials	H				M					H		

Attainment of Course outcome with program outcome
M. Pharmacy (Pharmaceutics II semester)

Course Outcome	Program Outcome (PO)											
MPH201T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To impart knowledge on the area of advances in novel drug delivery systems.	H	H	H	M	L				H	H	H	
The various approaches for development of novel drug delivery systems	H	H	H	H	M			M		H		H
The criteria for selection of drugs and polymers for the development of NTDS	H	H	H	M	M					H		H
The formulation and evaluation of novel drug delivery systems	H	H	H	H	L					H		

Course Outcome	Program Outcome (PO)											
MPH-202T	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
To impart knowledge and skills necessary for dose calculations, dose adjustments	H	H	L	L	H	H	L	L	H	H	L	L
To apply biopharmaceutics theories in practical problem solving.	H	H	L	L	L	H	L	L	M	M	L	L
The use raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination.	H	H	M	H	H	L	L	M	L	H	L	L
The critical evaluation of biopharmaceutic studies involving drug product equivalency.	H	H	H	M	M	M	L	H	L	M	M	M
The design and evaluation of dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters.	H	H	H	H	L	L	M	M	M	H	M	L
The potential clinical pharmacokinetic problems and application of basics of pharmacokinetic	H	H	H	M	M	L	M	L	L	H	L	M

Course Outcome	Program Outcome (PO)											
(MPH203T)	1	2	3	4	5	6	7	8	9	10	11	12
The student understand the impact of Computers in Pharmaceutical Research and Development	H	M	H							H		
The Student understands the Computational Modeling for ADME.	H		H	M						H		
The student understands the role of computer aided application in formulation developments.	H		H	M						H		L
The student learns the implementation of computer simulation in Biopharmaceutics and clinical developments.	H		H	M						H		
The students understand the importance of artificial intelligence, (AI), Robotics and Computational fluid dynamics (CFD).	H		H	M						H		L

Course Outcome	Program Outcome (PO)											
MPH204T	1	2	3	4	5	6	7	8	9	10	11	12
CO-01 To impart knowledge and skills necessary for the fundamental need for cosmetic and cosmeceutical products	M				L					M	M	
CO-02 To understand key ingredients used in cosmetics and cosmeceuticals		M	M							M		
CO-03 To understand Key building blocks for various formulations			M							M		
CO-04 To understand Current technologies in the market	M			M								
CO-05 To understand basic science to develop and evaluation of cosmetics and cosmeceuticals	L			L								
CO-06 Scientific knowledge to develop cosmetics and cosmeceuticals with desired Safety, stability, and efficacy.	M	L										
CO-07 To know about regulatory requirements related to cosmetics					M							