RAMAIAH UNIVERSITY OF APPLIED SCIENCES

M.S. Ramaiah University of Applied Sciences

Programme Structure and Course Details of

B. Pharm Degree Programme

AY 2026-27

(Revisions approved in the 11th BOS held on 9th June 2026)

Faculty of Pharmacy

FACULTY OF PHARMACY RUAS

Dean – Academic Affairs
Ramaiah University of Applied Sciences
Bangalore

University's Vision, Mission and Objectives

The M. S. Ramaiah University of Applied Sciences (MSRUAS) will focus on student-centric professional education and motivates its staff and students to contribute significantly to the growth of technology, science, economy and society through their imaginative, creative and innovative pursuits. Hence, the University has articulated the following vision and objectives.

Vision

MSRUAS aspires to be the premier university of choice in Asia for student centric professional education and services with a strong focus on applied research whilst maintaining the highest academic and ethical standards in a creative and innovative environment

Mission

Our purpose is the creation and dissemination of knowledge. We are committed to creativity, innovation and excellence in our teaching and research. We value integrity, quality and teamwork in all our endeavors. We inspire critical thinking, personal development and a passion for lifelong learning. We serve the technical, scientific and economic needs of our Society.

Objectives

1. To disseminate knowledge and skills through instructions, teaching, training, seminars, workshops and symposia in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to equip students and scholars to meet the needs of industries, business and society
2. To generate knowledge through research in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to meet the challenges that arise in industry, business and society
3. To promote health, human well-being and provide holistic healthcare
4. To provide technical and scientific solutions to real life problems posed by industry, business and society in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences
5. To instill the spirit of entrepreneurship in our youth to help create more career opportunities in thesociety by incubating and nurturing technology product ideas and supporting technology backed business
6. To identify and nurture leadership skills in students and help in the development of our future leaders to enrich the society we live in
7. To develop partnership with universities, industries, businesses, research establishments, NGOs, international organizations, governmental organizations in India and abroad to enrich the experiences of faculties and students through research and developmental programmes

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Faculty's Vision and Mission

Vision

Aspires to create skilled and competent pharmacy professionals by imparting quality education in pharmaceutical sciences to meet the global health challenges for the betterment of mankind

Mission

M1 - To impart quality education to develop pharmacy professionals to lead the progress in global healthcare

M2 - To evolve into center of excellence in pharmaceutical research

M3 - To create entrepreneurs and problem solvers in multi-disciplinary arena

M4 – To inculcate professional ethics and passion for lifelong learning

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Faculty	Pharmacy
Programme Code	009
Programme Name	B. Pharm.
Dean of the Faculty	Dr. S. Bharath

1. **Title of the Award:** Bachelor of Pharmacy
2. **Mode of Study:** Full-Time
3. **Awarding Institution /Body:** M. S. Ramaiah University of Applied Sciences, Bengaluru
4. **Joint Award:** Not Applicable
5. **Teaching Institution:** Faculty of Pharmacy, M. S. Ramaiah University of Applied Sciences, Bengaluru
6. **Date of Programme Specifications:** May 2026
7. **Date of Programme Approval by the Academic Council of MSRUAS:** 06 April 2017
8. **Next Review Date:** April 2029
9. **Programme Approving Regulating Body and Date of Approval:** Pharmacy Council of India
10. **Programme Accredited Body and Date of Accreditation:** Not Applicable
11. **Grade Awarded by the Accreditation Body:** Not Applicable
12. **Programme Accreditation Validity:** Not Applicable
13. **Programme Benchmark:** Not Applicable
14. **Rationale for the Programme**

Pharmacists play a vital role in the health care system from manufacturing to dispensing of medications including educating the patients regarding rational use of the prescribed drugs. The spectrum of pharmacy profession is very wide, as it covers numerous opportunities in the pharma Industry-R&D, manufacturing and retail, healthcare sector, pharmacy education and regulatory bodies.

Globally, the availability of professionals in terms of pharmacist to population ratio is inadequate. The rapid development and diversification of pharmaceutical industries and health care sector has created ample opportunities for pharmacy graduates at national and international level. Among the biggest factors fueling the growth are contract research for Pharma R&D and manufacturing for global pharma companies. The retail sector is also witnessing growth due to entry of major retail chains.

M.S. Ramaiah College of Pharmacy, now a constituent of MSRUAS as Faculty of Pharmacy, has been in existence for almost three decades. The institution has produced over 2000 graduates, 600 postgraduates and several doctorates. Over the years, institutions have grown and evolved as one of the Premier Institutions in the state of Karnataka. The University infrastructure with latest technologies empowers the students with in-depth knowledge and practical skills to pursue high end research and innovation.

The Faculty of Pharmacy offers outcome based four-year B. Pharm. degree programme blending the art of science, technology and human relationships in a unique fashion. The multidisciplinary Faculty environment of the University provides holistic learning experience enabling students to

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think critically and acquire practical skills for the smooth transition from academics to competitive professional environment.

15. Programme Mission

The purpose of the programme is to create innovators in multi-disciplinary settings, entrepreneurs and leaders with knowledge, understanding, cognitive abilities, practical and transferable skills gained through systematic and rigorous learning in the chosen academic domain.

16. Graduate Attributes (GAs)

GA-1. **Pharmaceutical Knowledge Proficiency**: Strong grounding in core and applied pharmaceutical sciences and practice

GA-2. **Scientific and Analytical Thinking**: Ability to critically analyze data, processes, and clinical information

GA-3. **Ethical and Professional Integrity**: Commitment to ethical conduct, patient safety, and regulatory compliance

GA-4. **Patient-Centered Orientation**: Sensitivity to patient needs, cultural diversity, and healthcare outcomes

GA-5. **Industry and Practice Readiness**: Preparedness for roles in industry, hospitals, community pharmacy, research, and regulation

GA-6. **Digital and Technological Awareness**: Familiarity with AI, data analytics, automation, and modern pharmaceutical technologies

GA-7. **Effective Communication Skill**: Clear, empathetic, and professional interaction across healthcare settings

GA-8. **Teamwork and Leadership Skills**: Ability to collaborate, lead, and contribute constructively in teams

GA-9. **Innovation and Problem-Solving Mindset**: Capability to identify problems and develop practical, evidence-based solutions

GA-10. **Lifelong Learning Orientation**: Motivation for continuous professional development and higher education

17. Programme Outcomes (POs)

B. Pharm. graduates will be able to:

PO-1. **Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical

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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 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:** Honor 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 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 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.

18. Programme Goal

The Programme goal is to produce fully trained pharmacists with knowledge and understanding

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of formulations, manufacture and evaluation of dosage forms; and the ability to think independently, to pursue a career in the domain of Pharmacy

19. Program Educational Objectives (PEOs)

The objectives of the B. Pharm Programme are to:

PEO 1: **Knowledge:** To produce graduates with adequate knowledge regarding basic principles of pharmaceutical sciences

PEO 2: **Skill Development**: To impart analytic and cognitive skills required to develop innovative solutions to solve problems in pharmaceutical industries and society

PEO 3: **Preparation:** To prepare students with leadership and entrepreneurial skills and to provide lifelong learning opportunities for a career in academia, industry and commerce thereby enabling them to develop into proficient professionals

PEO 4: **Professionalism:** To inculcate strong human values and enhance interpersonal skills to create awareness regarding healthcare issues for the improvement of society

20. Programme Specific Outcomes (PSOs)

At the end of the B. Pharm program, the graduate will be able to:

PSO-1. Apply fundamental knowledge and basic practical skills in pharmaceutical sciences to develop safe and effective solutions for healthcare problems

PSO-2. Engage in lifelong learning through continuous professional growth, practical training, and skill-based certifications, while developing leadership abilities

21. Programme Structure:

Table 1 Programme Structure

Semester 1							
Sl. No.	**Code**	**Course Title**	**Theory (h/W/S)**	**Tutorials (h/W/S)**	**Practical (h/W/S)**	**Total Credits**	**Max. Marks**
1	BPC101	Human Anatomy and Physiology I Theory	3	1	0	4	100
2	BPC102	Pharmaceutical Analysis I Theory	3	1	0	4	100
3	BPC103	Pharmaceutics I Theory	3	1	0	4	100
4	BPC104	Pharmaceutical Inorganic Chemistry Theory	3	1	0	4	100
5	BPC105	Communication skills Theory*	2	0	0	2	50
6	BPC106/ BPC107	Remedial Mathematics*/ Remedial Biology/	2	0	0	2	50

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7	BPL108	Human Anatomy and Physiology I Practical	0	0	4	2	50
8	BPL109	Pharmaceutical Analysis I Practical	0	0	4	2	50
9	BPL110	Pharmaceutics I Practical	0	0	4	2	50
10	BPL111	Pharmaceutical Inorganic Chemistry Practical	0	0	4	2	50
11	BPL112	Communication skills Practical*	0	0	2	1	25
12	BPL113	Remedial Biology Practical*	0	0	2	1	25
		Total	**16**	**4**	**20**	**27/29$/30#**	**750**
		Total number of contact hours per week	**36/38$/40#**				

*Faculty Examination

$Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM) course.

#Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB) course.

Semester 2

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BPC114	Human Anatomy and Physiology II Theory	3	1	0	4	100
2	BPC115	Pharmaceutical Organic Chemistry I Theory	3	1	0	4	100
3	BPC116	Biochemistry Theory	3	1	0	4	100
4	BPC117	Pathophysiology Theory	3	1	0	4	100
5	BPC118	Computer Applications in Pharmacy Theory*	3	0	0	3	75
6	BPC119	Environmental Sciences Theory*	3	0	0	3	75
7	BPL120	Human Anatomy and Physiology II Practical	0	0	4	2	50
8	BPL121	Pharmaceutical Organic Chemistry I Practical	0	0	4	2	50
9	BPL122	Biochemistry Practical	0	0	4	2	50
10	BPL123	Computer Applications in Pharmacy Practical*	0	0	2	1	25
		Total	**18**	**4**	**14**	**29**	**725**
		Total number of contact hours per week	**36**				

*Faculty Examination

Semester 3

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BPC224	Pharmaceutical Organic Chemistry II Theory	3	1	0	4	100
2	BPC225	Physical Pharmaceutics I Theory	3	1	0	4	100
	BPC226	Pharmaceutical Microbiology	3	1	0	4	100

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3		Theory					
4	BPC227	Pharmaceutical Engineering Theory	3	1	0	4	100
5	BPL228	Pharmaceutical Organic Chemistry II Practical	0	0	4	2	50
6	BPL229	Physical Pharmaceutics I Practical	0	0	4	2	50
7	BPL230	Pharmaceutical Microbiology Practical	0	0	4	2	50
8	BPL231	Pharmaceutical Engineering Practical	0	0	4	2	50
Total			**12**	**4**	**16**	**24**	**600**
Total number of contact hours per week			**32**				

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Semester 4							
Sl. No.	**Code**	**Course Title**	**Theory (h/W/S)**	**Tutorials (h/W/S)**	**Practical (h/W/S)**	**Total Credits**	**Max. Marks**
1	BPC232	Pharmaceutical Organic Chemistry III Theory	3	1	0	4	100
2	BPC233	Medicinal Chemistry I Theory	3	1	0	4	100
3	BPC234	Physical Pharmaceutics II Theory	3	1	0	4	100
4	BPC235	Pharmacology I Theory	3	1	0	4	100
5	BPC236	Pharmacognosy and Phytochemistry I Theory	3	1	0	4	100
6	BPL237	Medicinal Chemistry I Practical	0	0	4	2	50
7	BPL238	Physical Pharmaceutics II Practical	0	0	4	2	50
8	BPL239	Pharmacology I Practical	0	0	4	2	50
9	BPL240	Pharmacognosy and Phytochemistry I Practical	0	0	4	2	50
		Total	**15**	**5**	**16**	**28**	**700**
Total Number of Contact Hours per week			**36**				

Semester 5							
Sl. No.	**Code**	**Course Title**	**Theory (h/W/S)**	**Tutorials (h/W/S)**	**Practical (h/W/S)**	**Total Credits**	**Max. Marks**
1	BPC341	Medicinal Chemistry II Theory	3	1	0	4	100
2	BPC342	Industrial Pharmacy I Theory	3	1	0	4	100
3	BPC343	Pharmacology II Theory	3	1	0	4	100
4	BPC344	Pharmacognosy and Phytochemistry II Theory	3	1	0	4	100
5	BPC345	Pharmaceutical Jurisprudence Theory	3	1	0	4	100
6	BPL346	Industrial Pharmacy Practical	0	0	4	2	50
7	BPL347	Pharmacology II Practical	0	0	4	2	50
8	BPL348	Pharmacognosy and Phytochemistry II Practical	0	0	4	2	50
		Total	**15**	**5**	**12**	**26**	**650**
Total number of contact hours per week			**32**				

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Semester 6							
Sl. No.	**Code**	**Course Title**	**Theory (h/W/S)**	**Tutorials (h/W/S)**	**Practical (h/W/S)**	**Total Credits**	**Max. Marks**
1	BPC349	Medicinal Chemistry III Theory	3	1	0	4	100
2	BPC350	Pharmacology III Theory	3	1	0	4	100
3	BPC351	Herbal Drug Technology Theory	3	1	0	4	100
4	BPC352	Biopharmaceutics and Pharmacokinetics Theory	3	1	0	4	100
5	BPC353	Pharmaceutical Biotechnology Theory	3	1	0	4	100
6	BPC354	Quality Assurance Theory	3	1	0	4	100
7	BPL355	Medicinal chemistry III Practical	0	0	4	2	50
8	BPL356	Pharmacology III Practical	0	0	4	2	50
9	BPL357	Herbal Drug Technology Practical	0	0	4	2	50
Total			**18**	**6**	**12**	**30**	**750**
Total Number of Contact Hours per week			**36**				

Semester 7							
Sl. No.	**Code**	**Course Title**	**Theory (h/W/S)**	**Tutorials (h/W/S)**	**Practical (h/W/S)**	**Total Credits**	**Max. Marks**
1	BPC458	Instrumental Methods of Analysis Theory	3	1	0	4	100
2	BPC459	Industrial Pharmacy II Theory	3	1	0	4	100
3	BPC460	Pharmacy Practice Theory	3	1	0	4	100
4	BPC461	Novel Drug Delivery System Theory	3	1	0	4	100
5	BPL462	Instrumental Methods of Analysis Practical	0	0	4	2	50
6	BPM463-PC	Practice School - Pharmaceutical Chemistry	0	0	12	6	150
7	BPM463-PG	Practice School - Advanced Herbal Drug Technology					
	BPM463-PL	Practice School- Animal Facility Management and Pharmacological Screening Techniques					
	BPM463-PP	Practice School- Pharmacy Practice					
	BPM463-PS	Practice School - Pharmaceutical Manufacturing Science					
	Total		**12**	**4**	**16**	**24**	**600**
Total Number of Contact Hours per week			**32**				

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Semester 8							
Sl. No.	**Code**	**Course Title**	**Theory (h/W/S)**	**Tutorials (h/W/S)**	**Practical (h/W/S)**	**Total Credits**	**Max. Marks**
1	BPC464	Biostatistics and Research Methodology Theory	3	1	0	4	100
2	BPC465	Social and Preventive Pharmacy Theory	3	1	0	4	100
3	BPE466	Pharma Marketing Management Theory	3 + 3 = 6	1+1=2	0	4+4=8	100 + 100 = 200
4	BPE467	Pharmaceutical Regulatory Science Theory			0		
5	BPE468	Pharmacovigilance Theory			0		
6	BPE469	Quality Control and Standardization of Herbals Theory			0		
7	BPE470	Computer Aided Drug Design Theory			0		
8	BPE471	Cell and Molecular Biology Theory			0		
9	BPE472	Cosmetic Science Theory			0		
10	BPE473	Experimental Pharmacology Theory			0		
11	BPE474	Advanced Instrumentation Techniques Theory			0		
12	BPE475	Dietary Supplements and Nutraceuticals Theory			0		
13	BPP476	Project Work	12	0	0	6	150
		Total	**24**	**4**	**0**	**22**	**550**
Total Number of Contact Hours per week			**28**				

22. Course Delivery: As per the Timetable

23. Teaching and Learning Methods

1. Face to Face Lectures using Audio-Visuals
2. Workshops, Group Discussions, Debates, Presentations
3. Demonstrations
4. Guest Lectures
5. Laboratory work/Field work/Workshop
6. Industry Visit
7. Seminars
8. Group Exercises
9. Project Work
10. Project
11. Exhibitions
12. Technical Festivals

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24. Assessment and Grading

Semester I

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC101	Human Anatomy and Physiology I Theory	10	15	1 h	25	75	3 h	100
BPC102	Pharmaceutical Analysis I Theory	10	15	1 h	25	75	3 h	100
BPC103	Pharmaceutics I Theory	10	15	1 h	25	75	3 h	100
BPC104	Pharmaceutical Inorganic Chemistry Theory	10	15	1 h	25	75	3 h	100
BPC105	Communication skills Theory*	5	10	1 h	15	35	1.5 h	50
BPC106/ BPC107	Remedial Mathematics*/ Remedial Biology	5	10	1 h	15	35	1.5 h	50
BPL108	Human Anatomy and Physiology I Practical	5	10	4 h	15	35	4 h	50
BPL109	Pharmaceutical Analysis I Practical	5	10	4 h	15	35	4 h	50
BPL110	Pharmaceutics I Practical	5	10	4 h	15	35	4 h	50
BPL111	Pharmaceutical Inorganic Chemistry Practical	5	10	4 h	15	35	4 h	50
BPL112	Communication skills Practical*	5	5	2 h	10	15	2 h	25
BPL113	Remedial Biology Practical*	5	5	2 h	10	15	2 h	25

*Faculty Examination

Semester II

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC114	Human Anatomy and Physiology II Theory	10	15	1 h	25	75	3 h	100
BPC115	Pharmaceutical Organic Chemistry I Theory	10	15	1 h	25	75	3 h	100
BPC116	Biochemistry Theory	10	15	1 h	25	75	3 h	100
BPC117	Pathophysiology Theory	10	15	1 h	25	75	2 h	100
BPC118	Computer Applications in Pharmacy Theory*	10	15	1 h	25	50	1.5 h	75
BPC119	Environmental Sciences Theory*	10	15	1 h	25	50	1.5 h	75
BPL120	Human Anatomy and Physiology II Practical	5	10	4 h	15	35	4 h	50
BPL121	Pharmaceutical Organic Chemistry I Practical	5	10	4 h	15	35	4 h	50
BPL122	Biochemistry Practical	5	10	4 h	15	35	4 h	50
BPL123	Computer Applications in Pharmacy Practical*	5	5	2 h	10	15	4 h	25

*Faculty Examination

Semester III

Course code	Name of Course	Internal Assessment	Semester End Examination	Total marks

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		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC224	Pharmaceutical Organic Chemistry II Theory	10	15	1 h	25	75	3h	100
BPC225	Physical Pharmaceutics I Theory	10	15	1 h	25	75	3h	100
BPC226	Pharmaceutical Microbiology Theory	10	15	1 h	25	75	3h	100
BPC227	Pharmaceutical Engineering Theory	10	15	1 h	25	75	3h	100
BPL228	Pharmaceutical Organic Chemistry II Practical	5	10	4 h	15	35	4	50
BPL229	Physical Pharmaceutics I Practical	5	10	4 h	15	35	4 h	50
BPL230	Pharmaceutical Microbiology Practical	5	10	4 h	15	35	4 h	50
BPL231	Pharmaceutical Engineering Practical	5	10	4 h	15	35	4 h	50

Semester IV

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC232	Pharmaceutical Organic Chemistry III Theory	10	15	1 h	25	75	3 h	100
BPC233	Medicinal Chemistry I Theory	10	15	1 h	25	75	3 h	100
BPC234	Physical Pharmaceutics II Theory	10	15	1 h	25	75	3 h	100
BPC235	Pharmacology I Theory	10	15	1 h	25	75	3 h	100
BPC236	Pharmacognosy and Phytochemistry I Theory	10	15	1 h	25	75	3 h	100
BPL237	Medicinal Chemistry I Practical	5	10	4 h	15	35	4 h	50
BPL238	Physical Pharmaceutics II Practical	5	10	4 h	15	35	4 h	50
BPL239	Pharmacology I Practical	5	10	4 h	15	35	4 h	50
BPL240	Pharmacognosy and Phytochemistry I Practical	5	10	4 h	15	35	4 h	50

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Semester V

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC341	Medicinal Chemistry II Theory	10	15	1 h	25	75	3 h	100
BPC342	Industrial Pharmacy I Theory	10	15	1 h	25	75	3 h	100
BPC343	Pharmacology II Theory	10	15	1 h	25	75	3 h	100
BPC344	Pharmacognosy and Phytochemistry II Theory	10	15	1 h	25	75	3 h	100
BPC345	Pharmaceutical Jurisprudence Theory	10	15	1 h	25	75	3 h	100
BPL346	Industrial Pharmacy Practical	5	10	4 h	15	35	4 h	50
BPL347	Pharmacology II Practical	5	10	4 h	15	35	4 h	50
BPL348	Pharmacognosy and Phytochemistry II Practical	5	10	4 h	15	35	4 h	50

Semester VI

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC349	Medicinal Chemistry III Theory	10	15	1 h	25	75	3 h	100
BPC350	Pharmacology III Theory	10	15	1 h	25	75	3 h	100
BPC351	Herbal Drug Technology Theory	10	15	1 h	25	75	3 h	100
BPC352	Biopharmaceutics and Pharmacokinetics Theory	10	15	1 h	25	75	3 h	100
BPC353	Pharmaceutical Biotechnology Theory	10	15	1 h	25	75	3 h	100
BPC354	Quality Assurance Theory	10	15	1 h	25	75	3 h	100
BPL355	Medicinal chemistry III Practical	5	10	4 h	15	35	4 h	50
BPL356	Pharmacology III Practical	5	10	4 h	15	35	4 h	50
BPL357	Herbal Drug Technology Practical	5	10	4 h	15	35	4 h	50

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Semester VII

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC458	Instrumental Methods of Analysis Theory	10	15	1h	25	75	3h	100
BPC459	Industrial Pharmacy II Theory	10	15	1h	25	75	3h	100
BPC460	Pharmacy Practice Theory	10	15	1h	25	75	3h	100
BPC461	Novel Drug Delivery System Theory	10	15	1h	25	75	3h	100
BPL462	Instrumental Methods of Analysis – Practical	5	10	4 h	15	35	4 h	50
BPM463	Practice School*	25	-	-	25	125	5h	150

*Faculty Examination

Semester VIII

Course code	Name of Course	Internal Assessment				Semester End Examination		Total marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BPC464	Biostatistics and Research Methodology Theory	10	15	1h	25	75	3h	100
BPC465	Social and Preventive Pharmacy Theory	10	15	1h	25	75	3h	100
BPE466	Pharma Marketing Management Theory	10 + 10	15 + 15	1h + 1h = 2h	25 + 25 = 50	75 + 75 = 150	3h + 3h = 6 h	100
BPE467	Pharmaceutical Regulatory Science Theory							100
BPE468	Pharmacovigilance Theory							100
BPE469	Quality Control and Standardization of Herbals							100
BPE470	Computer Aided Drug Design							100
BPE471	Cell and Molecular Biology							100
BPE472	Cosmetic Science Theory							100
BPE473	Experimental Pharmacology							100
BPE474	Advanced Instrumentation Techniques							100
BPE475	Dietary Supplements and Nutraceuticals							100
BPP476	Project Work					150	4h	150

24.1 Components of Grading

There shall be **two components** of grading in the assessment of each course:

Component 1, Continuous Evaluation (CE): This component involves multiple subcomponents (SC1, SC2, etc.) of learning assessment. The assessment of the subcomponents of CE is conducted during the semester at regular intervals. This subcomponent represents the formative assessment of students' learning.

Component 2, Semester-end Examination (SEE): This component represents the summative assessment carried out in the form an examination conducted at the end of the semester.

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Marks obtained CE and SEE components have a weightage of 25:75 (CE: 25% and SEE: 75%) in determining the final marks obtained by a student in a theory course while the Laboratory course will have a weightage of 30:70 (CE-30 % and SEE: 70%).

The complete details of Grading are given in the Academic Regulations.

24.2 Continuous Evaluation Policies

Continuous evaluation depends on the type of course as discussed below:

24.2.1 Theory Course

Focus of COs on each Component or Subcomponent of Evaluation				
	Component 1: CE (25% Weightage)			Component 2: SEE (75% Weightage)
Subcomponent	SC1	SC2	SC3	
Subcomponent Type	Attendance	Assignment and Student Interaction	Sessional Exam	Semester End Examination 75 Marks
Maximum Marks	4	6	15	
CO-1				
CO-2				
CO-3				
CO-4				
CO-5				
CO-6				
The details of SC1, SC2, and SC3 are presented in the Programme Specifications Document.				

24.2.2 Laboratory Course

For a laboratory course, the scheme for determining the CE marks is as under:

Focus of COs on each Component or Subcomponent of Evaluation				
	Component 1: CE (30% Weightage)			Component 2: SEE (70% Weightage)
Subcomponent ▶	SC1	SC2	SC3	
Subcomponent Type ▶	Attendance	Practical record/viva voce	Sessional Exam	Semester End Examination 35 Marks
Maximum Marks ▶	2	3	10	
CO-1				
CO-2				
CO-3				
CO-4				
The details of SC1, SC2 and SC3 are presented in the Programme Specifications Document				

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24.2.3 Skill enhancement courses

Focus of COs on each Component or Subcomponent of Evaluation				
	Component 1: CE (17% Weightage)			Component 2: SEE (83% Weightage)
Subcomponent	SC1	SC2	SC3	
Subcomponent Type	Attendance	Teacher Student Interaction	Assignment	Report submission and Presentation 50+75 Marks
Maximum Marks	4	6	15	
CO-1		X	X	X
CO-2		X	X	X
CO-3		X	X	X
CO-4		X	X	X
CO-5		X	X	X
The details of SC1, SC2, and SC3 are presented in the Programme Specifications Document.				

Scheme for awarding internal assessment: Continuous mode

Theory	
Criteria	**Maximum Marks**
Attendance (Refer Table below)	4
Academic activities (Assignment and interaction with students)	6
Total	10
Laboratory	
Criteria	**Maximum Marks**
Attendance (Refer Table below)	2
Based on Practical Records, Regular viva voce, etc.	3
Total	5

Guidelines for the allotment of marks for attendance

Percentage of Attendance	Theory	Practical
95 – 100	4	2
90 – 94	3	1.5
85 – 89	2	1
80 – 84	1	0.5
Less than 80	0	0

Two Sessional exams shall be conducted for each theory / laboratory course as per the schedule fixed. The scheme of question paper for theory and practical Sessional examinations is given below. The average marks of two Sessional exams shall be computed for internal assessment as per the requirements given in Table – 2.
Sessional exam for theory shall be conducted for 30 marks and shall be computed for 15 marks.
Similarly, Sessional exam for practical shall be conducted for 40 marks and shall be computed for 10 marks.

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Question paper pattern for theory Sessional examinations

For courses having University exam

I. Multiple choice (Answer all Questions)		= 6×1=06
II. Objective Questions (Answer all Questions)		= 3×2=06
III. Short Answers (Answer 2 out of 3)		= 2×5=10
IV. Long Answers (Answer 1 out of 2)		= 1×8=08
	Total	**= 30 marks**

For courses having Faculty exam

I. Multiple choice (Answer all Questions)		= 6×1=06
II. Objective Questions (Answer all Questions)		= 3×2=06
III. Short Answers (Answer 2 out of 3)		= 2×5=10
IV. Long Answers (Answer 1 out of 2)		= 1×8=08
	Total	**= 30 marks**

Question Paper pattern for Laboratory sessional examination

I. Synopsis / Spotters		= 10
II. Experiments		= 25
III. Viva Voce		= 5
	Total	**= 40 marks**

Question paper pattern for Semester End theory examinations for 75 Marks paper

I. Objective Questions (Answer all Questions)		= 10×2=20
II. Long Answers (Answer 2 out of 3)		= 2×10=20
III. Short Answers (Answer 7 out of 9)		= 7×5=35
	Total	**= 75 marks**

For 50 Marks paper

I. Long Answers (Answer 2 out of 3)		= 2×10=20
II. Short Answers (Answer 6 out of 8)		= 6×5=30
	Total	**= 50 marks**

For 35 Marks paper

I. Long Answers (Answer 1 out of 2)		=1×10=10
II. Short Answers (Answer 5 out of 7)		= 5×5=25
	Total	**= 35 marks**

Question paper pattern for Semester End laboratory examinations

I. Synopsis /Spotters		= 5
II. Experiments		=25
III. Viva Voce		= 5
	Total	**= 35 marks**

25. Project work

All the students shall undertake a project under the supervision of a teacher and submit a report. The area of the project shall directly relate any one of the elective subject opted by the student in semester VIII. The project shall be carried out in a group. The project report shall be submitted in triplicate (typed & bound copy not less than 25 pages). The internal and external examiner appointed by the University shall evaluate the project at the time

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of the Practical examinations of other semester(s). Students shall be evaluated in groups and the projects shall be evaluated as per the criteria given below.

Evaluation of Dissertation Book:

Objective(s) of the work done	15 Marks
Methodology adopted	20 Marks
Results and Discussions	20 Marks
Conclusions and Outcomes	20 Marks
Total	**75 Marks**

Evaluation of Presentation:

Presentation of work	25 Marks
Communication skills	20 Marks
Question and answer skills	30 Marks
Total	**75 Marks**

Explanation: *The 75 marks assigned to the dissertation book shall be same for all the students in a group. However, the 75 marks assigned for presentation shall be awarded based on the performance of individual students in the given criteria.*

26. Industrial training

Every candidate shall be required to work for at least 150 hours spread over four weeks in a Pharmaceutical Industry/Hospital, after Semester IV. It includes Production unit, Quality Control department, Quality Assurance department, Analytical laboratory, Chemical manufacturing unit, Pharmaceutical R&D, Hospital (Clinical Pharmacy), Clinical Research Organization, Community Pharmacy, etc, and shall submit satisfactory report of such work and certificate duly signed by the authority of training organization to the head of the institute.

27. Practice School

In the VII semester, every candidate shall undergo practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the program committee from time to time. At the end of the practice school, every student shall submit a printed report (in triplicate), on the practice school he/she attended (not more than 25 pages). Along with the exams of semester VII, the report submitted by the student, knowledge and skills acquired by the student through practice school shall be evaluated by the subject experts at the faculty level and grade point shall be awarded.

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28. Student Support for Learning

1. Course Notes
2. Reference Books in the Library
3. Magazines and Journals
4. Internet Facility
5. Computing Facility
6. Laboratory Facility
7. Workshop Facility
8. Staff Support
9. Lounges for Discussions
10. Any other support that enhances their learning

29. Quality Control Measures

1. Review of Course Notes
2. Review of Question Papers and Assignment Questions
3. Student Feedback
4. Moderation of Assessed Work
5. Opportunities for students to see their assessed work
6. Review by external examiners and external examiners reports
7. Staff Student Consultative Committee meetings
8. Student exit feedback
9. Subject Assessment Board (SAB)
10. Programme Assessment Board (PAB)

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30. Programme Map (Course-PO-PSO Map)

Sem.	Course Title	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3	PSO-4
1	Human Anatomy and Physiology I Theory	3	0	3	0	0	1	2	3	2	3	3	3	0	0	3
1	Pharmaceutical Analysis-I Theory	3	2	2	2	-	-	1	1	1	1	1	3	1	-	1
1	Pharmaceutics - I Theory	3	3	3	3	1	3	2	2	3	2	3	3	3	2	3
1	Pharmaceutical Inorganic Chemistry Theory	3	2	2	1	1	2	2	2	2	1		3	2	2	2
1	Communication skills Theory*	-	-	-	-	-	-	-	1	3	3	-	-	-	2	2
1	Remedial Biology*	3	0	0	2	1	2	0	1	1	2	3	3	0	2	2
1	Remedial Mathematics*	2	2	2	3	-	-	-	-	-	-	-	2	3	-	-
1	Human Anatomy and Physiology I Practical	3	0	3	3	0	0	2	2	2	3	3	3	3	0	3
1	Pharmaceutical Analysis I Practical	3	1	2	1	-	-	2	1	1	1	2	3	2	-	2
1	Pharmaceutics – I Practical	3	3	2	3	-	3	1	2	2	3	3	3	3	2	3
1	Pharmaceutical Inorganic Chemistry Practical	3	1	1	1	-	-	1	1	-	-	1	3	2	1	2
1	Communication skills Practical*	-	-	-	1	1	-	-	2	2	3	-	-	2	-	2
1	Remedial Biology Practical*	3	0	3	3	0	0	0	0	2	3	3	3	0	0	3
2	Human Anatomy and Physiology II Theory	3	0	2	0	0	2	0	0	2	0	2	3	0	0	3
2	Pharmaceutical Organic Chemistry I Theory	3	2	2	3	-	-	-	1	-	-	1	3	3	-	3
2	Biochemistry Theory	3	-	2	1	-	-	1	1	1	1	2	3	-	-	2
2	Pathophysiology Theory	3	2	2	1	0	1	1	3	1	2	1	3	0	0	3
2	Computer Applications in Pharmacy Theory*	3	0	0	0	0	1	0	1	1	0	2	3	0	0	3
2	Environmental Sciences Theory*	3	0	0	0	0	1	0	1	1	0	2	3	0	0	3
2	Human Anatomy and Physiology II Practical	3	0	3	3	0	0	0	2	3	3	3	3	3	0	3
2	Pharmaceutical Organic Chemistry I Practical	3	1	1	2	-	-	1	1	-	-	1	2	1	-	1
2	Biochemistry Practical	3	2	2	1	-	-	2	2	1	-	2	3	-	-	3
2	Computer Applications in Pharmacy Practical*															
3	Pharmaceutical Organic Chemistry II Theory	3	2	2	3	-	-	3	1	1	2	2	3	3	-	2
3	Physical Pharmaceutics I Theory	3	2	3	2	1	1	1	1	2	1	1	3	3	-	-
3	Pharmaceutical Microbiology Theory	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
3	Pharmaceutical Engineering Theory	3	3	3	1	-	-	-	2	-	2	-	3	2	1	2

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3	Pharmaceutical Organic Chemistry II Practical	3	3	3	2	1	-	3	2	3	3	2	3	3	-	2
3	Physical Pharmaceutics I Practical	3	2	3	2	-	1	1	-	-	-	1	3	3	-	2
3	Pharmaceutical Microbiology Practical	3	3	3	3	3	2	3	3	2	2	3	3	3	3	3
3	Pharmaceutical Engineering Practical	3	3	3	3	1	-	-	2	-	2	1	3	3	1	1
4	Pharmaceutical Organic Chemistry III Theory	3	1	2	2	-	-	1	1	1	1	2	2	2	1	2
4	Medicinal Chemistry I Theory	3	1	2	2	1	1	1	1	1	1	1	3	2	2	2
4	Physical Pharmaceutics II Theory	3	2	3	3	1	1	2	2	2	3	3	3	3	2	3
4	Pharmacology I Theory	3	3	2	1	1	1	1	0	0	2	1	3	1	1	3
4	Pharmacognosy and Phytochemistry I Theory	3	2	3	3	1	-	3	3	3	3	3	3	3	1	3
4	Medicinal Chemistry I Practical	3	3	2	1	1	1	2	1	2	2	2	3	2	1	2
4	Physical Pharmaceutics II Practical	3	2	3	3	1	1	2	2	2	3	3	3	3	2	3
4	Pharmacology I Practical	2	1	2	2	2	0	1	0	1	1	2	3	1	1	3
4	Pharmacognosy and Phytochemistry I Practical	3	3	3	3	2	2	3	2	1	1	3	3	3	3	3
Sem	**Course Title**	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**
5	Medicinal Chemistry II Theory	3	1	2	3	-	-	3	2	3	2	1	3	3	-	2
5	Industrial Pharmacy I Theory	3	2	3	3	1	-	2	2	3	3	3	3	3	2	3
5	Pharmacology II Theory	3	2	2	2	1	2	1	1	2	1	1	3	0	2	3
5	Pharmacognosy and Phytochemistry II Theory	3	2	3	3	-	-	2	-	-	-	3	3	3	-	3
5	Pharmaceutical Jurisprudence Theory	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3
5	Industrial Pharmacy I Practical	3	2	3	3	2	-	3	3	2	3	3	3	3	2	3
5	Pharmacology II Practical	3	2	2	2	1	2	1	1	2	1	1	3	0	0	3
5	Pharmacognosy and Phytochemistry II Practical	3	2	3	3	-	-	2	2	-	-	3	3	3	-	3
6	Medicinal Chemistry III Theory	3	3	3	3	-	-	3	1	1	2	2	2	2	2	1
6	Pharmacology III Theory	3	2	2	2	1	2	1	1	2	1	1	3	0	0	3
6	Herbal Drug Technology Theory	3	2	3	3	1	1	2	-	1	2	3	3	3	1	3
6	Biopharmaceutics and Pharmacokinetics Theory	3	3	3	3	2	2	2	3	2	3	3	3	3	2	3
6	Pharmaceutical Biotechnology Theory	3	2	3	3	-	-	2	-	-	-	3	3	3	1	3
6	Quality Assurance Theory	3	2	2	2	1	1	1	1	1	2	1	3	-	1	1
6	Medicinal chemistry III Practical	3	2	1	2	1	1	2	1	2	2	2	2	3	1	2
6	Pharmacology III Practical	3	1	1	2	1	2	2	1	2	1	1	3	3	0	3
6	Herbal Drug Technology Practical	3	3	3	3	2	2	3	2	1	1	3	3	3	2	3

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7	Instrumental Methods of Analysis Theory	3	1	2	2	-	1	1	3	1	2	1	2	2	-	3
7	Industrial Pharmacy II Theory	3	3	3	3	1	2	2	2	3	3	2	3	3	2	3
7	Pharmacy Practice Theory	3	2	3	2	2	3	3	2	2	-	3	3	-	2	3
7	Novel Drug Delivery System Theory	3	3	3	3	2	3	2	3	3	2	3	3	3	3	3
7	Instrumental Methods of Analysis – Practical	3	2	3	1	-	1	2	1	1	-	1	2	2	-	2
7	Practice School* - PC	3	3	3	3	1	-	2	2	2	1	3	3	2	-	3
	Practice School* - PG	3	2	3	3	1	1	2	2	2	3	3	3	3	2	3
	Practice School* - PL	3	2	3	2	-	-	1	2	-	-	3	3	3	2	3
	Practice School* - PP	3	2	3	2	3	2	2	2	3	1	3	3	2	2	3
	Practice School* - PS	3	2	3	3	3	3	2	3	2	1	3	3	2	2	1
8	Biostatistics and Research Methodology	3	3	3	3	1	2	2	2	3	3	3	3	3	2	3
8	Social and Preventive Pharmacy	3	2	3	2	3	3	2	3	3	2	2	2	-	3	2
8	Pharma Marketing Management	3	3	2	-	2	2	3	2	2	-	3	2	-	2	3
8	Pharmaceutical Regulatory Science	3	3	2	2	1	2	2	2	2	1	2	3	2	2	2
8	Pharmacovigilance	3	2	3	2	2	3	3	3	2	2	2	2	-	2	2
8	Quality Control and Standardization of Herbals	3	2	3	2	2	2	1	3	1	1	3	3	3	2	2
8	Computer Aided Drug Design	3	3	3	3	2	-	2	1	2	2	1	3	2	-	2
8	Cell and Molecular Biology	3	3	3	3	2	2	1	2	1	0	1	3	0	2	3
8	Cosmetic Science	3	3	3	3	1	3	3	3	3	2	2	3	3	1	3
8	Experimental Pharmacology	3	3	2	2	1	0	1	2	1	1	1	3	1	1	3
8	Advanced Instrumentation Techniques	3	2	2	2	1	2	2	2	1	2	2	3	3	2	2
8	Dietary Supplements and Nutraceuticals	3	-	2	2	2	3	2	2	2	1	3	3	2	2	2
8	Project Work	3	3	3	3	3	2	2	3	2	2	2	3	2	2	3

31. Co-curricular Activities

Students are encouraged to take part in co-curricular activities like seminars, conferences, symposia, paper writing, attending industry exhibitions, project competitions and related activities for enhancing their knowledge and networking.

32. Cultural and Literary Activities

Annual cultural festivals are held to showcase the creative talents in students. They are involved in planning and organizing the activities.

33. Sports and Athletics

Students are encouraged to take part in sports and athletic events regularly. Annual sports meet will be held to demonstrate sportsmanship and competitive spirit.

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