

Academic Year
2015 – 2016
Course Structure

SAVITRIBAI PHULE PUNE UNIVERSITY

FACULTY OF PHARMACEUTICAL SCIENCES



COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2015-16)

Credit and Grading Based Semester System



1

V.V.P.F.
Principal

**Dr.V.V.P.F's College of Pharmacy,
Vilad Ghat, Ahmednagar**

Annexure I

Scheme of Examination for eight semesters of B. Pharm. Course Name and number of heads of passing, number of paper, duration of examination, maximum marks, minimum marks for passing, Sessional Examination, duration, maximum marks.

Semester-I**Class- First Yr. B. Pharmacy**

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Sessional Maximum marks	Continuous Assessment marks		
1.1.1 T	Pharmaceutics- I	3	3	3	60	24	1.5	20	20	100	40
1.1.1 P	Pharmaceutics- I	3	2	4	60	24	3	20	20	100	40
1.1.2 T	Modern Dispensing Practices	3	3	3	60	24	1.5	20	20	100	40
1.1.2 P	Modern Dispensing Practices	3	2	4	60	24	3	20	20	100	40
1.1.3 T	Pharmaceutical Inorganic Chemistry	3	3	3	60	24	1.5	20	20	100	40
1.1.3 P	Pharmaceutical Inorganic Chemistry	3	2	4	60	24	3	20	20	100	40
1.1.4 T	Pharmaceutical Organic Chemistry-I	3	3	3	60	24	1.5	20	20	100	40
1.1.4 P	Pharmaceutical Organic Chemistry-I	3	2	4	60	24	3	20	20	100	40
1.1.5 T	Human Anatomy & Physiology-I	3	3	3	60	24	1.5	20	20	100	40
1.1.5 P	Human Anatomy & Physiology-I	3	2	4	60	24	3	20	20	100	40
1.1.6 T	Communication and soft skill development	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 28



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Semester-II

Class- First Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
1.2.1 T	Pharmaceutics- II	3	3	3	60	24	1.5	20	20	100	40
1.2.1 T	Dosage form design	3	3	3	60	24	1.5	20	20	100	40
1.2.2 P	Dosage form design	3	2	4	60	24	3	20	20	100	40
1.2.3 T	Pharmaceutical Organic Chemistry-II	3	3	3	60	24	1.5	20	20	100	40
1.2.3 P	Pharmaceutical Organic Chemistry-II	3	2	4	60	24	3	20	20	100	40
1.2.4 T	Human Anatomy & Physiology-II	3	3	3	60	24	1.5	20	20	100	40
1.2.4 P	Human Anatomy & Physiology-II	3	2	4	60	24	3	20	20	100	40
1.2.5 T	Pharmacognosy	3	3	3	60	24	1.5	20	20	100	40
1.2.5 P	Pharmacognosy	3	2	4	60	24	3	20	20	100	40
1.2.6 T	Pharmaceutical Analysis I	3	3	3	60	24	1.5	20	20	100	40
1.2.6 P	Pharmaceutical Analysis I	3	2	4	60	24	3	20	20	100	40

Total Credits = 28



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UNIVERSITY OF PUNE

FACULTY OF PHARMACEUTICAL SCIENCES




COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2013-14)




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Vilad Ghat, Ahmednagar

Semester-III**Second Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
2.3.1 T	Physical Pharmaceutics- I	3
2.3.1 P	Physical Pharmaceutics- I	3
2.3.2 T	Pharmaceutical Microbiology	3
2.3.2 P	Pharmaceutical Microbiology	3
2.3.3 T	Pharmaceutical Biochemistry	3
2.3.3 P	Pharmaceutical Biochemistry	3
2.3.4 T	Pharmaceutical Organic Chemistry-III	3
2.3.4 P	Pharmaceutical Organic Chemistry-III	3
2.3.5 T	Pharmacology-I	3
2.3.6 T	Pharmacognosy & Phytochemistry - I	3
2.3.6 P	Pharmacognosy & Phytochemistry - I	3
2.3.7 T	Environmental Science	2

Semester-IV**Second Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
2.4.1 T	Physical Pharmaceutics- II	3
2.4.1 P	Physical Pharmaceutics- II	3
2.4.2 T	Pathophysiology & Clinical Biochemistry	3
2.4.2 P	Pathophysiology & Clinical Biochemistry	3
2.4.3 T	Pharmaceutical Organic Chemistry-IV	3
2.4.3 P	Pharmaceutical Organic Chemistry-IV	3
2.4.4 T	Pharmaceutical Analysis-II	3
2.4.4 P	Pharmaceutical Analysis-II	3
2.4.5 T	Pharmacognosy & Phytochemistry - II	3
2.4.5 P	Pharmacognosy & Phytochemistry - II	3
2.4.6 T	Pharmaceutical Engineering	3



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Semester-V**Third Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
3.5.1 T	Industrial Pharmacy-I	3
3.5.1 P	Industrial Pharmacy-I	3
3.5.2 T	Pharmaceutical Analysis-III	3
3.5.2 P	Pharmaceutical Analysis-III	3
3.5.3 T	Medicinal Chemistry-I	3
3.5.3 P	Medicinal Chemistry-I	3
3.5.4 T	Pharmacology-II	3
3.5.4 P	Pharmacology-II	3
3.5.5 T	Analytical Pharmacognosy & Extraction Technology	3
3.5.5 P	Analytical Pharmacognosy & Extraction Technology	3
3.5.6 T	Pharmaceutical Business Management & Disaster Management	3
3.5.7 T	Active Pharmaceutical Ingredients Technology	3

Semester-VI**Third Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
3.6.1 T	Industrial Pharmacy-II	3
3.6.1 P	Industrial Pharmacy-II	3
3.6.2 T	Pharmaceutical Analysis-IV	3
3.6.2 P	Pharmaceutical Analysis-IV	3
3.6.3 T	Medicinal Chemistry-II	3
3.6.3 P	Medicinal Chemistry-II	3
3.6.4 T	Pharmacology-III	3
3.6.4 P	Pharmacology-III	3
3.6.5 T	Natural Product Chemistry	3
3.6.5 P	Natural Product Chemistry	3
3.6.6 T	Bioorganic Chemistry & Drug Design	3
3.6.7 T	Pharmaceutical Biotechnology	3



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UNIVERSITY OF PUNE

FACULTY OF PHARMACEUTICAL SCIENCES



COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2008-09)



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Principal

**Dr. V.V.P.F's College of Pharmacy,
Vilad Ghat, Ahmednagar**

SECOND YEAR B. PHARM.

Sr. No.	Subject	Theory Hours per Week	Practical Hours Per Week
2.1	Physical Pharmacy	3	3
2.2	Pharmaceutical Microbiology & Immunology	3	3
2.3	Pharmaceutical Biochemistry	3	3
2.4	Pharmaceutical Organic Chemistry -II	3	3
2.5	Pharmaceutical Analysis-I	2	3
2.6	Pharmacognosy-I	3	--
2.7	Pharmacology-I	3	--
2.8	Environmental Sciences	40 hrs / Year	
	TOTAL	20	15

THIRD YEAR B. PHARM.

Sr. No.	Subject	Theory Hours per Week	Practical Hours Per Week
3.1	Pharmaceutics -II	3	3
3.2	Pharmaceutical Biotechnology	2	--
3.3	Medicinal Chemistry -I	3	3
3.4	Pharmaceutical Analysis-II	3	3
3.5	Pharmacology-II	3	3
3.6	Pharmacognosy-II	3	3
3.7	Pharmaceutical Business Management	2	--
3.8	Project Work		
	TOTAL	19	15

FINAL YEAR B. PHARM.

Sr. No.	Subject	Theory Hours per Week	Practical Hours Per Week
4.1	Pharmaceutics-III	3	3
4.2	Bio-pharmaceutics & Pharmacokinetics	2	--
4.3	Medicinal Chemistry - II	3	3
4.4	Pharmaceutical Analysis-III	3	3
4.5	Pharmacology -III	3	3
4.6	Pharmacognosy-III	3	3
4.7	Pharmaceutical Jurisprudence	2	--
	TOTAL	19	15

R-VII: DEPARTMENTS AND THEIR SUBJECT HEADS:

For the purpose of calculation of departmental workload, appointments of examiners by 32(5) committees and specialization of teachers at master degree level for teaching various subjects, there shall following four departments based on four boards of studies. The subjects have been grouped under each department as under.



[Signature]
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UNIVERSITY OF PUNE

FACULTY OF PHARMACEUTICAL SCIENCES



MASTER OF PHARMACY (M.PHARM.) in

1. Pharmaceutics
2. Pharmaceutical chemistry
3. Pharmacology
4. Pharmacognosy
5. Quality assurance techniques

COURSE STRUCTURE & SYLLABI

(EFFECTIVE FROM ACADEMIC YEAR 2013-2014)



Dr. V.V.P.F.
Principal
Dr.V.V.P.F's College of Pharmacy,
Vilad Ghat, Ahmednagar

MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACEUTICAL CHEMISTRY

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)	
		Theory	Practical	Theory	Practical	Hrs.		Marks		Hrs.	Marks		
						UE	UE	IE	UE		UE		IE
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200	
	M-2 Research Methodology	4		4		3	50	50				100	
	M-I-1 Advanced Pharmaceutical Chemistry	4	8	4	4	3	50	50	8	50	50	200	
	M-I-2 Elective-I	3		3		3	50	50				100	
	Seminar				2			50				50	
II	M-I-3 Advanced Medicinal Chemistry	4	8	4	4	3	50	50	8	50	50	200	
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100	
	M-I-4 Drug Design	4		4		3	50	50				100	
	M-I-5 Elective-II	3		3		3	50	50				100	
	Seminar		4		2			50				50	
	Research work		12		6			50				50	
	Seminar on Research Envisaged for Dissertation				4			50				50	
III	Seminar on recent trends in Pharmaceutical Chemistry				4			50				50	
	Research work		36		18			150				150	
	Seminar on Dissertation				4			50				50	
IV	Research work		36		18			150				150	
	Dissertation & Defense (viva/voce)							100				100	
			Total	30	70						Grant Total	1800	
			Total Credits = 100										



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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : QUALITY ASSURANCE
TECHNIQUES

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M-1 Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-1-1 Advanced Quality Assurance Techniques (CGMP & Documentation)	4	8	4	4	3	50	50	8	50	50	200
	M-1-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-1-3 Pharmaceutical Validation	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-1-4 Quality Planning and Analysis	4		4		3	50	50				100
	M-1-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
III	Seminar on Research Envisaged for Dissertation				4		50					50
	Seminar on recent trends in Quality Assurance Techniques				4		50					50
	Research work		36		18		150					150
IV	Seminar on Dissertation				4		50					50
	Research work		36		18		150					150
	Dissertation & Defense (viva/voce)											100
			Total	30	70						Grant Total	1800

Total Credits = 100




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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACOLOGY

Sem. No	Paper	Scheme of Teaching Hrs./Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)	
		Theory	Practical	Theory	Practical	Hrs.			Marks				
						UE	UE	IE	UE	UE	IE		
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200	
	M-2 Research Methodology	4		4		3	50	50				100	
	M-I-1 Advanced Pharmacology (Preclinical Evaluation of Drugs)	4	8	4	4	3	50	50	8	50	50	200	
	M-I-2 Elective-I	3		3		3	50	50				100	
	Seminar				2			50				50	
	II	M-I-3 Clinical Pharmacology	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100	
	M-I-4 Molecular Pharmacology	4		4		3	50	50				100	
	M-I-5 Elective-II	3		3		3	50	50				100	
	Seminar		4		2			50				50	
	Research work		12		6			50				50	
	III	Seminar on Research Envisaged for Dissertation				4		50				50	
	Seminar on recent trends in Pharmacology				4			50				50	
	Research work		36		18			150				150	
	IV	Seminar on Dissertation				4		50				50	
	Research work		36		18			150				150	
	Dissertation & Defense (viva/voce)											100	
			Total	30	70						Grant Total	1800	
		Total Credits = 100											

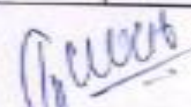



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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACEUTICS

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)	
		Theory	Practical	Theory	Practical	Hrs.		Marks		Hrs.			Marks
						UE	UE	IE	UE	UE	IE		
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200	
	M-2 Research Methodology	4		4		3	50	50				100	
	M-1-1 Advanced Pharmaceutics	4	8	4	4	3	50	50	8	50	50	200	
	M-1-2 Elective-I	3		3		3	50	50				100	
	Seminar				2			50				50	
II	M-1-3 Formulations & Development	4	8	4	4	3	50	50	8	50	50	200	
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100	
	M-1-4 Novel Drug Delivery Systems	4		4		3	50	50				100	
	M-1-5 Elective-II	3		3		3	50	50				100	
	Seminar		4		2			50				50	
	Research work		12		6			50				50	
	Seminar on Research Envisaged for Dissertation				4			50				50	
III	Seminar on recent trends in Pharmaceutical Sciences				4			50				50	
	Research work		36		18			150				150	
	IV Seminar on Dissertation				4			50				50	
IV	Research work		36		18			150				150	
	Dissertation & Defense (viva/voce)							100				100	
			Total	30	70						Grant Total	1800	
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SEMESTER-I

- (M. 1. 1) Advanced Analytical Techniques
- (M. 1.2) Advanced Analytical Techniques (Practical)
- (M.1.3) Research Methodology
- (M.1.4) Advanced Pharmaceutics
- (M.1.5) Advanced Pharmaceutics (Practical)
- (M.1.6) Advanced Pharmaceutical Chemistry
- (M.1.7) Advanced Pharmaceutical Chemistry (Practical)
- (M.1.8) Advance Pharmacology (Preclinical Evaluation of Drugs)
- (M.1.9) Advance Pharmacology (Preclinical Evaluation of Drugs) (Practical)
- (M.1.10) Advanced Pharmacognosy
- (M.1.11) Advanced Pharmacognosy (Practical)
- (M.1.12) Advanced Quality Assurance Techniques (cGMP & Documentation)
- (M.1.13) Advanced Quality Assurance Techniques (cGMP & Documentation) (Practical)

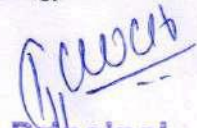
SEMESTER-II

- (M.2.1) Drug Regulatory Affairs
- (M.2.2) Formulations & Development
- (M.2.3) Formulations & Development (Practical)
- (M.2.4) Novel Drug Delivery Systems
- (M.2.5) Advanced Medicinal Chemistry
- (M.2.6) Advanced Medicinal Chemistry (Practical)
- (M.2.7) Drug Design
- (M.2.8) Clinical Pharmacology
- (M.2.9) Clinical Pharmacology (Practical)
- (M.2.10) Molecular Pharmacology
- (M.2.11) Phytochemistry & Phytopharmaceuticals
- (M.2.12) Phytochemistry & Phytopharmaceuticals (Practical)
- (M.2.13) Industrial Pharmacognosy
- (M.2.14) Pharmaceutical Validation
- (M.2.15) Pharmaceutical Validation (Practical)
- (M.2.16) Quality Planning And Analysis

ELECTIVE SUBJECTS OF ALL SEMESTERS

- (E.1.1) Quality Control & Assurance of Pharmaceuticals
- (E.1.2) Pharmaceutical Plant Design and Operations
- (E.1.3) Biopharmaceutics and Pharmacokinetics
- (E.1.4) Sterile Products Formulation & Technology
- (E.1.5) Active Pharmaceutical Ingredients (APIs) Manufacturing Technology
- (E.1.6) Chemistry of Medicinal Natural Products




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Academic Year
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BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2015-16)

Credit and Grading Based Semester System



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Annexure I

Scheme of Examination for eight semesters of B. Pharm. Course Name and number of heads of passing, number of paper, duration of examination, maximum marks, minimum marks for passing, Sessional Examination, duration, maximum marks.

Semester-I**Class- First Yr. B. Pharmacy**

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Sessional Maximum marks	Continuous Assessment marks		
1.1.1 T	Pharmaceutics- I	3	3	3	60	24	1.5	20	20	100	40
1.1.1 P	Pharmaceutics- I	3	2	4	60	24	3	20	20	100	40
1.1.2 T	Modern Dispensing Practices	3	3	3	60	24	1.5	20	20	100	40
1.1.2 P	Modern Dispensing Practices	3	2	4	60	24	3	20	20	100	40
1.1.3 T	Pharmaceutical Inorganic Chemistry	3	3	3	60	24	1.5	20	20	100	40
1.1.3 P	Pharmaceutical Inorganic Chemistry	3	2	4	60	24	3	20	20	100	40
1.1.4 T	Pharmaceutical Organic Chemistry-I	3	3	3	60	24	1.5	20	20	100	40
1.1.4 P	Pharmaceutical Organic Chemistry-I	3	2	4	60	24	3	20	20	100	40
1.1.5 T	Human Anatomy & Physiology-I	3	3	3	60	24	1.5	20	20	100	40
1.1.5 P	Human Anatomy & Physiology-I	3	2	4	60	24	3	20	20	100	40
1.1.6 T	Communication and soft skill development	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 28



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Semester-II

Class- First Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
1.2.1 T	Pharmaceutics- II	3	3	3	60	24	1.5	20	20	100	40
1.2.1 T	Dosage form design	3	3	3	60	24	1.5	20	20	100	40
1.2.2 P	Dosage form design	3	2	4	60	24	3	20	20	100	40
1.2.3 T	Pharmaceutical Organic Chemistry-II	3	3	3	60	24	1.5	20	20	100	40
1.2.3 P	Pharmaceutical Organic Chemistry-II	3	2	4	60	24	3	20	20	100	40
1.2.4 T	Human Anatomy & Physiology-II	3	3	3	60	24	1.5	20	20	100	40
1.2.4 P	Human Anatomy & Physiology-II	3	2	4	60	24	3	20	20	100	40
1.2.5 T	Pharmacognosy	3	3	3	60	24	1.5	20	20	100	40
1.2.5 P	Pharmacognosy	3	2	4	60	24	3	20	20	100	40
1.2.6 T	Pharmaceutical Analysis I	3	3	3	60	24	1.5	20	20	100	40
1.2.6 P	Pharmaceutical Analysis I	3	2	4	60	24	3	20	20	100	40

Total Credits = 28



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Semester-III

Class- Second Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
2.3.1 T	Physical Pharmaceutics- I	3	3	3	60	24	1.5	20	20	100	40
2.3.1 P	Physical Pharmaceutics- I	3	2	4	60	24	3	20	20	100	40
2.3.2 T	Pharmaceutical Microbiology	3	3	3	60	24	1.5	20	20	100	40
2.3.2 P	Pharmaceutical Microbiology	3	2	4	60	24	3	20	20	100	40
2.3.3 T	Pharmaceutical Biochemistry	3	3	3	60	24	1.5	20	20	100	40
2.3.3 P	Pharmaceutical Biochemistry	3	2	4	60	24	3	20	20	100	40
2.3.4 T	Pharmaceutical Organic Chemistry-III	3	3	3	60	24	1.5	20	20	100	40
2.3.4 P	Pharmaceutical Organic Chemistry-III	3	2	4	60	24	3	20	20	100	40
2.3.5 T	Pharmacology-I	3	3	3	60	24	1.5	20	20	100	40
2.3.6 T	Pharmacognosy & Phytochemistry - I	3	3	3	60	24	1.5	20	20	100	40
2.3.6 P	Pharmacognosy & Phytochemistry - I	3	2	4	60	24	3	20	20	100	40

Total Credits = 28



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Semester-IV

Class- Second Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
2.4.1 T	Physical Pharmaceutics-II	3	3	3	60	24	1.5	20	20	100	40
2.4.1 P	Physical Pharmaceutics-II	3	2	4	60	24	3	20	20	100	40
2.4.2 T	Pathophysiology & Clinical Biochemistry	3	3	3	60	24	1.5	20	20	100	40
2.4.2 P	Pathophysiology & Clinical Biochemistry	3	2	4	60	24	3	20	20	100	40
2.4.3 T	Pharmaceutical Organic Chemistry-IV	3	3	3	60	24	1.5	20	20	100	40
2.4.3 P	Pharmaceutical Organic Chemistry-IV	3	2	4	60	24	3	20	20	100	40
2.4.4 T	Pharmaceutical Analysis-II	3	3	3	60	24	1.5	20	20	100	40
2.4.4 P	Pharmaceutical Analysis-II	3	2	4	60	24	3	20	20	100	40
2.4.5 T	Pharmacognosy & Phytochemistry - II	3	3	3	60	24	1.5	20	20	100	40
2.4.5 P	Pharmacognosy & Phytochemistry - II	3	2	4	60	24	3	20	20	100	40
2.4.6 T	Pharmaceutical Engineering	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 28



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UNIVERSITY OF PUNE

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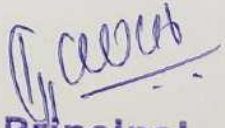


COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2013-14)




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Semester-V**Third Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
3.5.1 T	Industrial Pharmacy-I	3
3.5.1 P	Industrial Pharmacy-I	3
3.5.2 T	Pharmaceutical Analysis-III	3
3.5.2 P	Pharmaceutical Analysis-III	3
3.5.3 T	Medicinal Chemistry-I	3
3.5.3 P	Medicinal Chemistry-I	3
3.5.4 T	Pharmacology-II	3
3.5.4 P	Pharmacology-II	3
3.5.5 T	Analytical Pharmacognosy & Extraction Technology	3
3.5.5 P	Analytical Pharmacognosy & Extraction Technology	3
3.5.6 T	Pharmaceutical Business Management & Disaster Management	3
3.5.7 T	Active Pharmaceutical Ingredients Technology	3

Semester-VI**Third Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
3.6.1 T	Industrial Pharmacy-II	3
3.6.1 P	Industrial Pharmacy-II	3
3.6.2 T	Pharmaceutical Analysis-IV	3
3.6.2 P	Pharmaceutical Analysis-IV	3
3.6.3 T	Medicinal Chemistry-II	3
3.6.3 P	Medicinal Chemistry-II	3
3.6.4 T	Pharmacology-III	3
3.6.4 P	Pharmacology-III	3
3.6.5 T	Natural Product Chemistry	3
3.6.5 P	Natural Product Chemistry	3
3.6.6 T	Bioorganic Chemistry & Drug Design	3
3.6.7 T	Pharmaceutical Biotechnology	3



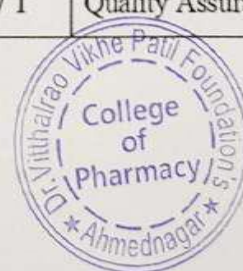
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Semester-VII**Final Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
4.7.1 T	Sterile Products	3
4.7.1 P	Sterile Products	3
4.7.2 T	Pharmaceutical Analysis-V	3
4.7.2 P	Pharmaceutical Analysis-V	3
4.7.3 T	Medicinal Chemistry-III	3
4.7.3 P	Medicinal Chemistry-III	3
4.7.4 T	Pharmacology-IV	3
4.7.4 P	Pharmacology-IV	3
4.7.5 T	Natural Drug Technology	3
4.7.5 P	Natural Drug Technology	3
4.7.6 T	Bio-pharmaceutics & Pharmacokinetics	2
4.7.7 T	Pharmaceutical Jurisprudence	3

Semester-VIII**Final Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
4.8.1 T	Advanced Drug Delivery System	3
4.8.1 P	Advanced Drug Delivery System	3
4.8.2 T	Cosmetic science	3
4.8.2 P	Cosmetic science	3
4.8.3 T	Pharmaceutical Analysis-VI	3
4.8.3 P	Pharmaceutical Analysis-V I	3
4.8.4 T	Medicinal Chemistry-IV	3
4.8.4 P	Medicinal Chemistry-IV	3
4.8.5 T	Pharmacology-V (Including Biostatistics)	3
4.8.5 P	Pharmacology-V (Including Biostatistics)	3
4.8.6 T	Natural Products: Commerce, Industry & Regulations	3
4.8.7 T	Quality Assurance Techniques	3



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MASTER OF PHARMACY (M.PHARM.) in

1. Pharmaceutics
2. Pharmaceutical chemistry
3. Pharmacology
4. Pharmacognosy
5. Quality assurance techniques

COURSE STRUCTURE & SYLLABI

(EFFECTIVE FROM ACADEMIC YEAR 2013-2014)



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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACEUTICAL CHEMISTRY

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-I-1 Advanced Pharmaceutical Chemistry	4	8	4	4	3	50	50	8	50	50	200
	M-I-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-I-3 Advanced Medicinal Chemistry	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-I-4 Drug Design	4		4		3	50	50				100
	M-I-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
III	Seminar on Research Envisaged for Dissertation				4		50					50
	Seminar on recent trends in Pharmaceutical Chemistry				4			50				50
	Research work		36		18			150				150
IV	Seminar on Dissertation				4		50					50
	Research work		36		18			150				150
	Dissertation & Defense (viva/voce)							100				100
			Total	30	70						Grant Total	1800
			Total Credits = 100									




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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : QUALITY ASSURANCE
TECHNIQUES

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M-1 Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-1-1 Advanced Quality Assurance Techniques (CGMP & Documentation)	4	8	4	4	3	50	50	8	50	50	200
	M-1-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-1-3 Pharmaceutical Validation	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-1-4 Quality Planning and Analysis	4		4		3	50	50				100
	M-1-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
III	Seminar on Research Envisaged for Dissertation				4			50				50
	Seminar on recent trends in Quality Assurance Techniques				4			50				50
	Research work		36		18			150				150
IV	Seminar on Dissertation				4			50				50
	Research work		36		18			150				150
	Dissertation & Defense (viva/voce)											100
			Total	30	70						Grant Total	1800
			Total Credits = 100									



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MASTER OF PHARMACY COURSE STRUCTURE

SPECIALIZATION : PHARMACOLOGY

Sem. No	Paper	Scheme of Teaching Hrs./Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)	
		Theory	Practical	Theory	Practical	Hrs.		Marks		Hrs.			Marks
						UE	UE	IE	UE	UE	IE		
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200	
	M-2 Research Methodology	4		4		3	50	50				100	
II	M-1-1 Advanced Pharmacology (Preclinical Evaluation of Drugs)	4	8	4	4	3	50	50	8	50	50	200	
	M-1-2 Elective-I	3		3		3	50	50				100	
	Seminar				2			50				50	
	M-1-3 Clinical Pharmacology	4	8	4	4	3	50	50	8	50	50	200	
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100	
III	M-1-4 Molecular Pharmacology	4		4		3	50	50				100	
	M-1-5 Elective-II	3		3		3	50	50				100	
	Seminar		4		2			50				50	
	Research work		12		6			50				50	
	Seminar on Research Envisaged for Dissertation				4		50					50	
IV	Seminar on recent trends in Pharmacology				4			50				50	
	Research work		36		18			150				150	
	Seminar on Dissertation				4		50					50	
	Research work		36		18			150				150	
	Dissertation & Defense (viva/voce)											100	
		Total		30	70				Grant Total			1800	
		Total Credits = 100											

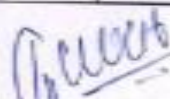


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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION - PHARMACEUTICS

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-I-1 Advanced Pharmaceutics	4	8	4	4	3	50	50	8	50	50	200
	M-I-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-I-3 Formulations & Development	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-I-4 Novel Drug Delivery Systems	4		4		3	50	50				100
	M-I-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
	Seminar on Research Envisaged for Dissertation				4			50				50
III	Seminar on recent trends in Pharmaceutical Sciences				4			50				50
	Research work		36		18			150				150
	IV Seminar on Dissertation				4			50				50
IV	Research work		36		18			150				150
	Dissertation & Defense (viva/voce)							100				100
			Total	30	70			100			Grant Total	1800
			Total Credits = 100									




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SEMESTER-I

- (M. 1. 1) Advanced Analytical Techniques
- (M. 1.2) Advanced Analytical Techniques (Practical)
- (M.1.3) Research Methodology
- (M.1.4) Advanced Pharmaceutics
- (M.1.5) Advanced Pharmaceutics (Practical)
- (M.1.6) Advanced Pharmaceutical Chemistry
- (M.1.7) Advanced Pharmaceutical Chemistry (Practical)
- (M.1.8) Advance Pharmacology (Preclinical Evaluation of Drugs)
- (M.1.9) Advance Pharmacology (Preclinical Evaluation of Drugs) (Practical)
- (M.1.10) Advanced Pharmacognosy
- (M.1.11) Advanced Pharmacognosy (Practical)
- (M.1.12) Advanced Quality Assurance Techniques (cGMP & Documentation)
- (M.1.13) Advanced Quality Assurance Techniques (cGMP & Documentation) (Practical)

SEMESTER-II

- (M.2.1) Drug Regulatory Affairs
- (M.2.2) Formulations & Development
- (M.2.3) Formulations & Development (Practical)
- (M.2.4) Novel Drug Delivery Systems
- (M.2.5) Advanced Medicinal Chemistry
- (M.2.6) Advanced Medicinal Chemistry (Practical)
- (M.2.7) Drug Design
- (M.2.8) Clinical Pharmacology
- (M.2.9) Clinical Pharmacology (Practical)
- (M.2.10) Molecular Pharmacology
- (M.2.11) Phytochemistry & Phytopharmaceuticals
- (M.2.12) Phytochemistry & Phytopharmaceuticals (Practical)
- (M.2.13) Industrial Pharmacognosy
- (M.2.14) Pharmaceutical Validation
- (M.2.15) Pharmaceutical Validation (Practical)
- (M.2.16) Quality Planning And Analysis

ELECTIVE SUBJECTS OF ALL SEMESTERS

- (E.1.1) Quality Control & Assurance of Pharmaceuticals
- (E.1.2) Pharmaceutical Plant Design and Operations
- (E.1.3) Biopharmaceutics and Pharmacokinetics
- (E.1.4) Sterile Products Formulation & Technology
- (E.1.5) Active Pharmaceutical Ingredients (APIs) Manufacturing Technology
- (E.1.6) Chemistry of Medicinal Natural Products



[Signature]
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Academic Year
2017 – 2018
Course Structure

SAVITRIBAI PHULE PUNE UNIVERSITY

FACULTY OF PHARMACEUTICAL SCIENCES



COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2015-16)

Credit and Grading Based Semester System



1

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Annexure I

Scheme of Examination for eight semesters of B. Pharm. Course Name and number of heads of passing, number of paper, duration of examination, maximum marks, minimum marks for passing, Sessional Examination, duration, maximum marks.

Semester-I**Class- First Yr. B. Pharmacy**

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Sessional Maximum marks	Continuous Assessment marks		
1.1.1 T	Pharmaceutics- I	3	3	3	60	24	1.5	20	20	100	40
1.1.1 P	Pharmaceutics- I	3	2	4	60	24	3	20	20	100	40
1.1.2 T	Modern Dispensing Practices	3	3	3	60	24	1.5	20	20	100	40
1.1.2 P	Modern Dispensing Practices	3	2	4	60	24	3	20	20	100	40
1.1.3 T	Pharmaceutical Inorganic Chemistry	3	3	3	60	24	1.5	20	20	100	40
1.1.3 P	Pharmaceutical Inorganic Chemistry	3	2	4	60	24	3	20	20	100	40
1.1.4 T	Pharmaceutical Organic Chemistry-I	3	3	3	60	24	1.5	20	20	100	40
1.1.4 P	Pharmaceutical Organic Chemistry-I	3	2	4	60	24	3	20	20	100	40
1.1.5 T	Human Anatomy & Physiology-I	3	3	3	60	24	1.5	20	20	100	40
1.1.5 P	Human Anatomy & Physiology-I	3	2	4	60	24	3	20	20	100	40
1.1.6 T	Communication and soft skill development	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 28



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Semester-II

Class- First Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
1.2.1 T	Pharmaceutics- II	3	3	3	60	24	1.5	20	20	100	40
1.2.1 T	Dosage form design	3	3	3	60	24	1.5	20	20	100	40
1.2.2 P	Dosage form design	3	2	4	60	24	3	20	20	100	40
1.2.3 T	Pharmaceutical Organic Chemistry-II	3	3	3	60	24	1.5	20	20	100	40
1.2.3 P	Pharmaceutical Organic Chemistry-II	3	2	4	60	24	3	20	20	100	40
1.2.4 T	Human Anatomy & Physiology-II	3	3	3	60	24	1.5	20	20	100	40
1.2.4 P	Human Anatomy & Physiology-II	3	2	4	60	24	3	20	20	100	40
1.2.5 T	Pharmacognosy	3	3	3	60	24	1.5	20	20	100	40
1.2.5 P	Pharmacognosy	3	2	4	60	24	3	20	20	100	40
1.2.6 T	Pharmaceutical Analysis I	3	3	3	60	24	1.5	20	20	100	40
1.2.6 P	Pharmaceutical Analysis I	3	2	4	60	24	3	20	20	100	40

Total Credits = 28




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Semester-III

Class- Second Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
2.3.1 T	Physical Pharmaceutics- I	3	3	3	60	24	1.5	20	20	100	40
2.3.1 P	Physical Pharmaceutics- I	3	2	4	60	24	3	20	20	100	40
2.3.2 T	Pharmaceutical Microbiology	3	3	3	60	24	1.5	20	20	100	40
2.3.2 P	Pharmaceutical Microbiology	3	2	4	60	24	3	20	20	100	40
2.3.3 T	Pharmaceutical Biochemistry	3	3	3	60	24	1.5	20	20	100	40
2.3.3 P	Pharmaceutical Biochemistry	3	2	4	60	24	3	20	20	100	40
2.3.4 T	Pharmaceutical Organic Chemistry-III	3	3	3	60	24	1.5	20	20	100	40
2.3.4 P	Pharmaceutical Organic Chemistry-III	3	2	4	60	24	3	20	20	100	40
2.3.5 T	Pharmacology-I	3	3	3	60	24	1.5	20	20	100	40
2.3.6 T	Pharmacognosy & Phytochemistry - I	3	3	3	60	24	1.5	20	20	100	40
2.3.6 P	Pharmacognosy & Phytochemistry - I	3	2	4	60	24	3	20	20	100	40

Total Credits = 28



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Semester-IV

Class- Second Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
2.4.1 T	Physical Pharmaceutics-II	3	3	3	60	24	1.5	20	20	100	40
2.4.1 P	Physical Pharmaceutics-II	3	2	4	60	24	3	20	20	100	40
2.4.2 T	Pathophysiology & Clinical Biochemistry	3	3	3	60	24	1.5	20	20	100	40
2.4.2 P	Pathophysiology & Clinical Biochemistry	3	2	4	60	24	3	20	20	100	40
2.4.3 T	Pharmaceutical Organic Chemistry-IV	3	3	3	60	24	1.5	20	20	100	40
2.4.3 P	Pharmaceutical Organic Chemistry-IV	3	2	4	60	24	3	20	20	100	40
2.4.4 T	Pharmaceutical Analysis-II	3	3	3	60	24	1.5	20	20	100	40
2.4.4 P	Pharmaceutical Analysis-II	3	2	4	60	24	3	20	20	100	40
2.4.5 T	Pharmacognosy & Phytochemistry - II	3	3	3	60	24	1.5	20	20	100	40
2.4.5 P	Pharmacognosy & Phytochemistry - II	3	2	4	60	24	3	20	20	100	40
2.4.6 T	Pharmaceutical Engineering	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 28



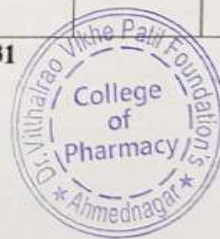
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Semester-V

Class- Third Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
3.5.1 T	Industrial Pharmacy-I	3	3	3	60	24	1.5	20	20	100	40
3.5.1 P	Industrial Pharmacy-I	3	2	4	60	24	3	20	20	100	40
3.5.2 T	Pharmaceutical Analysis-III	3	3	3	60	24	1.5	20	20	100	40
3.5.2 P	Pharmaceutical Analysis-III	3	2	4	60	24	3	20	20	100	40
3.5.3 T	Medicinal Chemistry-I	3	3	3	60	24	1.5	20	20	100	40
3.5.3 P	Medicinal Chemistry-I	3	2	4	60	24	3	20	20	100	40
3.5.4 T	Pharmacology-II	3	3	3	60	24	1.5	20	20	100	40
3.5.4 P	Pharmacology-II	3	2	4	60	24	3	20	20	100	40
3.5.5 T	Analytical Pharmacognosy & Extraction Technology	3	3	3	60	24	1.5	20	20	100	40
3.5.5 P	Analytical Pharmacognosy & Extraction Technology	3	2	4	60	24	3	20	20	100	40
3.5.6 T	Pharmaceutical Business Management & Disaster Management	3	3	3	60	24	1.5	20	20	100	40
3.5.7 T	Active Pharmaceutical Ingredients Technology	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



Dr. V.V.P.F.
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Semester-VI

Class- Third Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
3.6.1 T	Industrial Pharmacy-II	3	3	3	60	24	1.5	20	20	100	40
3.6.1 P	Industrial Pharmacy-II	3	2	4	60	24	3	20	20	100	40
3.6.2 T	Pharmaceutical Analysis-IV	3	3	3	60	24	1.5	20	20	100	40
3.6.2 P	Pharmaceutical Analysis-IV	3	2	4	60	24	3	20	20	100	40
3.6.3 T	Medicinal Chemistry-II	3	3	3	60	24	1.5	20	20	100	40
3.6.3 P	Medicinal Chemistry-II	3	2	4	60	24	3	20	20	100	40
3.6.4 T	Pharmacology-III	3	3	3	60	24	1.5	20	20	100	40
3.6.4 P	Pharmacology-III	3	2	4	60	24	3	20	20	100	40
3.6.5 T	Natural Product Chemistry	3	3	3	60	24	1.5	20	20	100	40
3.6.5 P	Natural Product Chemistry	3	2	4	60	24	3	20	20	100	40
3.6.6 T	Bioorganic Chemistry & Drug Design	3	3	3	60	24	1.5	20	20	100	40
3.6.7 T	Pharmaceutical Biotechnology	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



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UNIVERSITY OF PUNE

FACULTY OF PHARMACEUTICAL SCIENCES




COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2013-14)



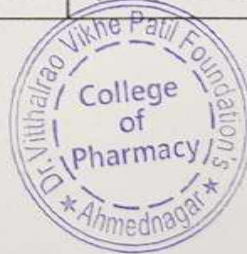

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Semester-VII**Final Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
4.7.1 T	Sterile Products	3
4.7.1 P	Sterile Products	3
4.7.2 T	Pharmaceutical Analysis-V	3
4.7.2 P	Pharmaceutical Analysis-V	3
4.7.3 T	Medicinal Chemistry-III	3
4.7.3 P	Medicinal Chemistry-III	3
4.7.4 T	Pharmacology-IV	3
4.7.4 P	Pharmacology-IV	3
4.7.5 T	Natural Drug Technology	3
4.7.5 P	Natural Drug Technology	3
4.7.6 T	Bio-pharmaceutics & Pharmacokinetics	2
4.7.7 T	Pharmaceutical Jurisprudence	3

Semester-VIII**Final Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
4.8.1 T	Advanced Drug Delivery System	3
4.8.1 P	Advanced Drug Delivery System	3
4.8.2 T	Cosmetic science	3
4.8.2 P	Cosmetic science	3
4.8.3 T	Pharmaceutical Analysis-VI	3
4.8.3 P	Pharmaceutical Analysis-V I	3
4.8.4 T	Medicinal Chemistry-IV	3
4.8.4 P	Medicinal Chemistry-IV	3
4.8.5 T	Pharmacology-V (Including Biostatistics)	3
4.8.5 P	Pharmacology-V (Including Biostatistics)	3
4.8.6 T	Natural Products: Commerce, Industry & Regulations	3
4.8.7 T	Quality Assurance Techniques	3



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UNIVERSITY OF PUNE

FACULTY OF PHARMACEUTICAL SCIENCES



MASTER OF PHARMACY (M.PHARM.) in

1. Pharmaceutics
2. Pharmaceutical chemistry
3. Pharmacology
4. Pharmacognosy
5. Quality assurance techniques

COURSE STRUCTURE & SYLLABI

(EFFECTIVE FROM ACADEMIC YEAR 2013-2014)



V.P.P.
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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACEUTICAL CHEMISTRY

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-I-1 Advanced Pharmaceutical Chemistry	4	8	4	4	3	50	50	8	50	50	200
	M-I-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-I-3 Advanced Medicinal Chemistry	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-I-4 Drug Design	4		4		3	50	50				100
	M-I-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
	Seminar on Research Envisaged for Dissertation				4		50					50
	Seminar on recent trends in Pharmaceutical Chemistry				4			50				50
Research work		36		18			150				150	
IV	Seminar on Dissertation				4		50					50
	Research work		36		18			150				150
	Dissertation & Defense (viva/voce)											100
			Total	30	70						Grant Total	1800
			Total Credits = 100									



[Signature]
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 Wad Ghat, Ahmednagar

MASTER OF PHARMACY COURSE STRUCTURE

SPECIALIZATION : QUALITY ASSURANCE

TECHNIQUES

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-4-1 Advanced Quality Assurance Techniques (CGMP & Documentation)	4	8	4	4	3	50	50	8	50	50	200
	M-4-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-4-3 Pharmaceutical Validation	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-4-4 Quality Planning and Analysis	4		4		3	50	50				100
	M-4-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
III	Seminar on Research Envisaged for Dissertation				4		50					50
	Seminar on recent trends in Quality Assurance Techniques				4			50				50
	Research work		36		18			150				150
IV	Seminar on Dissertation				4		50					50
	Research work		36		18			150				150
	Dissertation & Defense (viva/voce)											100
			Total	30	70						Grant Total	1800

Total Credits = 100




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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACOLOGY

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)
		Theory	Practical	Theory	Practical	Hrs.	Marks		Hrs.	Marks		
						UE	UE	IE	UE	UE	IE	
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
II	M-I-1 Advanced Pharmacology (Preclinical Evaluation of Drugs)	4	8	4	4	3	50	50	8	50	50	200
	M-I-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
	M-I-3 Clinical Pharmacology	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-I-4 Molecular Pharmacology	4		4		3	50	50				100
III	M-I-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
	Seminar on Research Envisaged for Dissertation				4		50					50
	Seminar on recent trends in Pharmacology				4			50				50
	Research work		36		18			150				150
IV	Seminar on Dissertation				4		50					50
	Research work		36		18		150					150
	Dissertation & Defense (viva/voce)											100
	Total			30	70						Grant Total	1800
		Total Credits = 100										

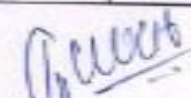



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MASTER OF PHARMACY COURSE STRUCTURE
SPECIALIZATION : PHARMACEUTICS

Sem. No	Paper	Scheme of Teaching Hrs/Weeks		Scheme of Credit		Scheme of Examination Theory			Practical			Total (Including 50 marks of Internal assessment)
		Theory	Practical	Theory	Practical	Hrs. Marks			Hrs. Marks			
						UE	UE	IE	UE	UE	IE	
I	M Advanced Analytical Techniques	4	8	4	4	3	50	50	8	50	50	200
	M-2 Research Methodology	4		4		3	50	50				100
	M-I-1 Advanced Pharmaceutics	4	8	4	4	3	50	50	8	50	50	200
	M-I-2 Elective-I	3		3		3	50	50				100
	Seminar				2			50				50
II	M-I-3 Formulations & Development	4	8	4	4	3	50	50	8	50	50	200
	M-3 Drug Regulatory Affairs	4		4		3	50	50				100
	M-I-4 Novel Drug Delivery Systems	4		4		3	50	50				100
	M-I-5 Elective-II	3		3		3	50	50				100
	Seminar		4		2			50				50
	Research work		12		6			50				50
III	Seminar on Research Envisaged for Dissertation				4		50					50
	Seminar on recent trends in Pharmaceutical Sciences				4			50				50
	Research work		36		18			150				150
IV	Seminar on Dissertation				4		50					50
	Research work		36		18			150				150
	Dissertation & Defense (viva/voce)											100
	Total			30	70			100			Grant Total	1800
				Total Credits = 100								




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SEMESTER-I

- (M. 1. 1) Advanced Analytical Techniques
- (M. 1.2) Advanced Analytical Techniques (Practical)
- (M.1.3) Research Methodology
- (M.1.4) Advanced Pharmaceutics
- (M.1.5) Advanced Pharmaceutics (Practical)
- (M.1.6) Advanced Pharmaceutical Chemistry
- (M.1.7) Advanced Pharmaceutical Chemistry (Practical)
- (M.1.8) Advance Pharmacology (Preclinical Evaluation of Drugs)
- (M.1.9) Advance Pharmacology (Preclinical Evaluation of Drugs) (Practical)
- (M.1.10) Advanced Pharmacognosy
- (M.1.11) Advanced Pharmacognosy (Practical)
- (M.1.12) Advanced Quality Assurance Techniques (cGMP & Documentation)
- (M.1.13) Advanced Quality Assurance Techniques (cGMP & Documentation) (Practical)

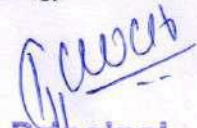
SEMESTER-II

- (M.2.1) Drug Regulatory Affairs
- (M.2.2) Formulations & Development
- (M.2.3) Formulations & Development (Practical)
- (M.2.4) Novel Drug Delivery Systems
- (M.2.5) Advanced Medicinal Chemistry
- (M.2.6) Advanced Medicinal Chemistry (Practical)
- (M.2.7) Drug Design
- (M.2.8) Clinical Pharmacology
- (M.2.9) Clinical Pharmacology (Practical)
- (M.2.10) Molecular Pharmacology
- (M.2.11) Phytochemistry & Phytopharmaceuticals
- (M.2.12) Phytochemistry & Phytopharmaceuticals (Practical)
- (M.2.13) Industrial Pharmacognosy
- (M.2.14) Pharmaceutical Validation
- (M.2.15) Pharmaceutical Validation (Practical)
- (M.2.16) Quality Planning And Analysis

ELECTIVE SUBJECTS OF ALL SEMESTERS

- (E.1.1) Quality Control & Assurance of Pharmaceuticals
- (E.1.2) Pharmaceutical Plant Design and Operations
- (E.1.3) Biopharmaceutics and Pharmacokinetics
- (E.1.4) Sterile Products Formulation & Technology
- (E.1.5) Active Pharmaceutical Ingredients (APIs) Manufacturing Technology
- (E.1.6) Chemistry of Medicinal Natural Products




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Academic Year
2018 – 2019
Course Structure

SAVITRIBAI PHULE PUNE UNIVERSITY

FACULTY OF SCIENCE AND TECHNOLOGY

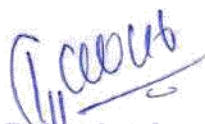


RULES & SYLLABUS

FIRST YEAR BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2018-2019)




Principal
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Vhad Ghat, Ahmednagar

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

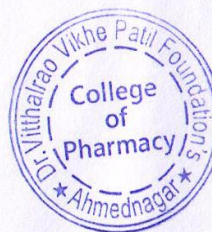
Semester I

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)

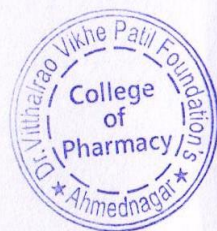


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Semester II

Course code	Name of the course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BP201T	Human Anatomy and Physiology II – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP202T	Pharmaceutical Organic Chemistry I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP203T	Biochemistry – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP204T	Pathophysiology – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP205T	Computer Applications in Pharmacy – Theory*	10	15	1 Hr	25	50	2 Hrs	75
BP206T	Environmental sciences – Theory*	10	15	1 Hr	25	50	2 Hrs	75
BP207P	Human Anatomy and Physiology II – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP208P	Pharmaceutical Organic Chemistry I – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP209P	Biochemistry – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP210P	Computer Applications in Pharmacy – Practical*	5	5	2 Hrs	10	15	2 Hrs	25
Total		80	125	20 Hrs	205	520	30 Hrs	725

* The subject experts at college level shall conduct examinations



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SAVITRIBAI PHULE PUNE UNIVERSITY

FACULTY OF PHARMACEUTICAL SCIENCES



COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2015-16)

Credit and Grading Based Semester System



1

V.V.P.F.
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**Dr.V.V.P.F's College of Pharmacy,
Vilad Ghat, Ahmednagar**

Semester-III

Class- Second Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
2.3.1 T	Physical Pharmaceutics- I	3	3	3	60	24	1.5	20	20	100	40
2.3.1 P	Physical Pharmaceutics- I	3	2	4	60	24	3	20	20	100	40
2.3.2 T	Pharmaceutical Microbiology	3	3	3	60	24	1.5	20	20	100	40
2.3.2 P	Pharmaceutical Microbiology	3	2	4	60	24	3	20	20	100	40
2.3.3 T	Pharmaceutical Biochemistry	3	3	3	60	24	1.5	20	20	100	40
2.3.3 P	Pharmaceutical Biochemistry	3	2	4	60	24	3	20	20	100	40
2.3.4 T	Pharmaceutical Organic Chemistry-III	3	3	3	60	24	1.5	20	20	100	40
2.3.4 P	Pharmaceutical Organic Chemistry-III	3	2	4	60	24	3	20	20	100	40
2.3.5 T	Pharmacology-I	3	3	3	60	24	1.5	20	20	100	40
2.3.6 T	Pharmacognosy & Phytochemistry - I	3	3	3	60	24	1.5	20	20	100	40
2.3.6 P	Pharmacognosy & Phytochemistry - I	3	2	4	60	24	3	20	20	100	40

Total Credits = 28



Dr. V. V. P. F.
Principal
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Vilad Ghat, Ahmednagar

Semester-IV

Class- Second Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
2.4.1 T	Physical Pharmaceutics-II	3	3	3	60	24	1.5	20	20	100	40
2.4.1 P	Physical Pharmaceutics-II	3	2	4	60	24	3	20	20	100	40
2.4.2 T	Pathophysiology & Clinical Biochemistry	3	3	3	60	24	1.5	20	20	100	40
2.4.2 P	Pathophysiology & Clinical Biochemistry	3	2	4	60	24	3	20	20	100	40
2.4.3 T	Pharmaceutical Organic Chemistry-IV	3	3	3	60	24	1.5	20	20	100	40
2.4.3 P	Pharmaceutical Organic Chemistry-IV	3	2	4	60	24	3	20	20	100	40
2.4.4 T	Pharmaceutical Analysis-II	3	3	3	60	24	1.5	20	20	100	40
2.4.4 P	Pharmaceutical Analysis-II	3	2	4	60	24	3	20	20	100	40
2.4.5 T	Pharmacognosy & Phytochemistry - II	3	3	3	60	24	1.5	20	20	100	40
2.4.5 P	Pharmacognosy & Phytochemistry - II	3	2	4	60	24	3	20	20	100	40
2.4.6 T	Pharmaceutical Engineering	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 28



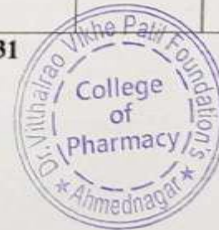
V. V. Patil
Principal
Dr. V. V. P.F.'s College of Pharmacy,
Vilad Ghat, Ahmednagar

Semester-V

Class- Third Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
3.5.1 T	Industrial Pharmacy-I	3	3	3	60	24	1.5	20	20	100	40
3.5.1 P	Industrial Pharmacy-I	3	2	4	60	24	3	20	20	100	40
3.5.2 T	Pharmaceutical Analysis-III	3	3	3	60	24	1.5	20	20	100	40
3.5.2 P	Pharmaceutical Analysis-III	3	2	4	60	24	3	20	20	100	40
3.5.3 T	Medicinal Chemistry-I	3	3	3	60	24	1.5	20	20	100	40
3.5.3 P	Medicinal Chemistry-I	3	2	4	60	24	3	20	20	100	40
3.5.4 T	Pharmacology-II	3	3	3	60	24	1.5	20	20	100	40
3.5.4 P	Pharmacology-II	3	2	4	60	24	3	20	20	100	40
3.5.5 T	Analytical Pharmacognosy & Extraction Technology	3	3	3	60	24	1.5	20	20	100	40
3.5.5 P	Analytical Pharmacognosy & Extraction Technology	3	2	4	60	24	3	20	20	100	40
3.5.6 T	Pharmaceutical Business Management & Disaster Management	3	3	3	60	24	1.5	20	20	100	40
3.5.7 T	Active Pharmaceutical Ingredients Technology	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



[Signature]
Principal
Dr. V.V.P.F's College of Pharmacy,
Vilad Ghat, Ahmednagar

Semester-VI

Class- Third Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
3.6.1 T	Industrial Pharmacy-II	3	3	3	60	24	1.5	20	20	100	40
3.6.1 P	Industrial Pharmacy-II	3	2	4	60	24	3	20	20	100	40
3.6.2 T	Pharmaceutical Analysis-IV	3	3	3	60	24	1.5	20	20	100	40
3.6.2 P	Pharmaceutical Analysis-IV	3	2	4	60	24	3	20	20	100	40
3.6.3 T	Medicinal Chemistry-II	3	3	3	60	24	1.5	20	20	100	40
3.6.3 P	Medicinal Chemistry-II	3	2	4	60	24	3	20	20	100	40
3.6.4 T	Pharmacology-III	3	3	3	60	24	1.5	20	20	100	40
3.6.4 P	Pharmacology-III	3	2	4	60	24	3	20	20	100	40
3.6.5 T	Natural Product Chemistry	3	3	3	60	24	1.5	20	20	100	40
3.6.5 P	Natural Product Chemistry	3	2	4	60	24	3	20	20	100	40
3.6.6 T	Bioorganic Chemistry & Drug Design	3	3	3	60	24	1.5	20	20	100	40
3.6.7 T	Pharmaceutical Biotechnology	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



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Semester-VII

Class- Final Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
4.7.1 T	Sterile Products	3	3	3	60	24	1.5	20	20	100	40
4.7.1 P	Sterile Products	3	2	4	60	24	3	20	20	100	40
4.7.2 T	Pharmaceutical Analysis-V	3	3	3	60	24	1.5	20	20	100	40
4.7.2 P	Pharmaceutical Analysis-V	3	2	4	60	24	3	20	20	100	40
4.7.3 T	Medicinal Chemistry-III	3	3	3	60	24	1.5	20	20	100	40
4.7.3 P	Medicinal Chemistry-III	3	2	4	60	24	3	20	20	100	40
4.7.4 T	Pharmacology-IV	3	3	3	60	24	1.5	20	20	100	40
4.7.4 P	Pharmacology-IV	3	2	4	60	24	3	20	20	100	40
4.7.5 T	Natural Drug Technology	3	3	3	60	24	1.5	20	20	100	40
4.7.5 P	Natural Drug Technology	3	2	4	60	24	3	20	20	100	40
4.7.6 T	Bio-pharmaceutics & Pharmacokinetics	3	3	3	60	24	1.5	20	20	100	40
4.7.7 T	Pharmaceutical Jurisprudence	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



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Semester-VIII

Class- Final Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
4.8.1 T	Advanced Drug Delivery System	3	3	3	60	24	1.5	20	20	100	40
4.8.1 P	Advanced Drug Delivery System	3	2	4	60	24	3	20	20	100	40
4.8.2 T	Cosmetic science	3	3	3	60	24	1.5	20	20	100	40
4.8.2 P	Cosmetic science	3	2	4	60	24	3	20	20	100	40
4.8.3 T	Pharmaceutical Analysis-VI	3	3	3	60	24	1.5	20	20	100	40
4.8.3 P	Pharmaceutical Analysis-VI	3	2	4	60	24	3	20	20	100	40
4.8.4 T	Medicinal Chemistry-IV	3	3	3	60	24	1.5	20	20	100	40
4.8.4 P	Medicinal Chemistry-IV	3	2	4	60	24	3	20	20	100	40
4.8.5 T	Pharmacology-V(Including Biostatistics)	3	3	3	60	24	1.5	20	20	100	40
4.8.5 P	Pharmacology-V(Including Biostatistics)	3	2	4	60	24	3	20	20	100	40
4.8.6 T	Natural Products: Commerce, Industry & Regulations	3	3	3	60	24	1.5	20	20	100	40
4.8.7 T	Quality Assurance Tech.	3	3	3	60	24	1	20	20	100	40

Total Credits = 31



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FACULTY OF SCIENCE AND TECHNOLOGY



RULES & SYLLABUS

FIRST YEAR MASTER OF PHARMACY (M. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2018-2019)




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Table - 4: Course of study for M. Pharm. (Pharmaceutical Chemistry)

Course Code	Course	Credit Hours	Credit Points	Hrs./week	Marks
Semester I					
MPC101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPC1012T	Advanced Organic Chemistry -I	4	4	4	100
MPC103T	Advanced Medicinal chemistry	4	4	4	100
MPC104T	Chemistry of Natural Products	4	4	4	100
MPC105P	Pharmaceutical Chemistry Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650
Semester II					
MPC201T	Advanced Spectral Analysis	4	4	4	100
MPC202T	Advanced Organic Chemistry -II	4	4	4	100
MPC203T	Computer Aided Drug Design	4	4	4	100
MPC204T	Pharmaceutical Process Chemistry	4	4	4	100
MPC205P	Pharmaceutical Chemistry Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650





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Table - 6: Course of study for M. Pharm. (Pharmaceutical Quality Assurance)

Course Code	Course	Credit Hours	Credit Points	Hrs./week	Marks
Semester I					
MQA101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MQA102T	Quality Management System	4	4	4	100
MQA103T	Quality Control and Quality Assurance	4	4	4	100
MQA104T	Product Development and Technology Transfer	4	4	4	100
MQA105P	Pharmaceutical Quality Assurance Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
Semester II					
MQA201T	Hazards and Safety Management	4	4	4	100
MQA202T	Pharmaceutical Validation	4	4	4	100
MQA203T	Audits and Regulatory Compliance	4	4	4	100
MQA204T	Pharmaceutical Manufacturing Technology	4	4	4	100
MQA205P	Pharmaceutical Quality Assurance Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650





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Table - 10: Course of study for (Pharmacology)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
Semester I					
MPL 101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPL 102T	Advanced Pharmacology-I	4	4	4	100
MPL 103T	Pharmacological and Toxicological Screening Methods-I	4	4	4	100
MPL 104T	Cellular and Molecular Pharmacology	4	4	4	100
MPL 105P	Pharmacology Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
Semester II					
MPL 201T	Advanced Pharmacology II	4	4	4	100
MPL 202T	Pharmacological and Toxicological Screening Methods-II	4	4	4	100
MPL 203T	Principles of Drug Discovery	4	4	4	100
MPL 204T	Experimental Pharmacology practical- II	4	4	4	100
MPL 205P	Pharmacology Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650




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Table - 2: Course of study for M. Pharm. (Pharmaceutics)

Course Code	Course	Credit Hours	Credit Points	Hrs./week	Marks
Semester I					
MPH101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPH102T	Drug Delivery System	4	4	4	100
MPH103T	Modern Pharmaceutics	4	4	4	100
MPH104T	Regulatory Affair	4	4	4	100
MPH105P	Pharmaceutics Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
Semester II					
MPH201T	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	4	4	4	100
MPH202T	Advanced Biopharmaceutics & Pharmacokinetics	4	4	4	100
MPH203T	Computer Aided Drug Delivery System	4	4	4	100
MPH204T	Cosmetic and Cosmeceuticals	4	4	4	100
MPH205P	Pharmaceutics Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650




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**Table - 12: Course of study for M. Pharm. III Semester
(Common for All Specializations)**

Course Code	Course	Credit Hours	Credit Points
MRM 301T	Research Methodology and Biostatistics*	4	4
-	Journal club	1	1
-	Discussion / Presentation (Proposal Presentation)	2	2
-	Research Work	28	14
Total		35	21

* Non University Exam

**Table - 13: Course of study for M. Pharm. IV Semester
(Common for All Specializations)**

Course Code	Course	Credit Hours	Credit Points
-	Journal Club	1	1
-	Research Work	31	16
-	Discussion/Final Presentation	3	3
Total		35	20

Table - 14: Semester wise credits distribution

Semester	Credit Points
I	26
II	26
III	21
IV	20
Co-curricular Activities (Attending Conference, Scientific Presentations and Other Scholarly Activities)	Minimum=02 Maximum=07*
Total Credit Points	Minimum=95 Maximum=100*

*Credit Points for Co-curricular Activities



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Academic Year
2019 – 2020
Course Structure

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RULES & SYLLABUS

FIRST YEAR BACHELOR OF PHARMACY (B. Pharm.) COURSE –

2019 pattern (EFFECTIVE FROM ACADEMIC YEAR 2019-2020)



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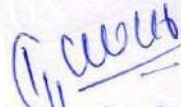

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Table-I: Course of study for semester I

Course code	Name of the course	No. of Hours per week/Total no of hours	Tutorial	Credit points
BP101T	Human Anatomy and Physiology I– Theory	3/45	1	4
BP102T	Pharmaceutical Analysis I – Theory	3/45	1	4
BP103T	Pharmaceutics I – Theory	3/45	1	4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3/45	1	4
BP105T	Communication skills – Theory *	2/30	-	2
BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics – Theory*	2/30	-	D
BP107P	Human Anatomy and Physiology – Practical	4/60	-	2
BP108P	Pharmaceutical Analysis I – Practical	4/60	-	2
BP109P	Pharmaceutics I – Practical	4/60	-	2
BP110P	Pharmaceutical Inorganic Chemistry – Practical	4/60	-	2
BP111P	Communication skills – Practical*	2/30	-	1
BP112RBP	Remedial Biology – Practical*	2/30	-	D
Total		32/34^S/36[#]/4 80/510^S/540[#]	4	27

#Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB) course. However for Remedial biology and Mathematics no credits to be allotted only 50 % passing i.e D grade will be prerequisite.

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

* Non University Examination (NUE)



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Table-II: Course of study for semester II

Course Code	Name of the course	No. of Hours per week/Total no of hours	Tutorial	Credit points
BP201T	Human Anatomy and Physiology II – Theory	3/45	1	4
BP202T	Pharmaceutical Organic Chemistry I – Theory	3/45	1	4
BP203T	Biochemistry – Theory	3/45	1	4
BP204T	Pathophysiology – Theory	3/45	1	4
BP205T	Computer Applications in Pharmacy – Theory *	3/45	-	3
BP206T	Environmental sciences – Theory *	3/45	-	3
BP207P	Human Anatomy and Physiology II – Practical	4/60	-	2
BP208P	Pharmaceutical Organic Chemistry I – Practical	4/60	-	2
BP209P	Biochemistry – Practical	4/60	-	2
BP210P	Computer Applications in Pharmacy – Practical*	4/60	-	1
Total		32/480	4	29

*Non University Examination (NUE)

Table-III: Course of study for semester III

Course code	Name of the course	No. of Hours per week/Total no of hours	Tutorial	Credit points
BP301T	Pharmaceutical Organic Chemistry II – Theory	3/45	1	4
BP302T	Physical Pharmaceutics I – Theory	3/45	1	4
BP303T	Pharmaceutical Microbiology – Theory	3/45	1	4
BP304T	Pharmaceutical Engineering – Theory	3/45	1	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	4/60	-	2
BP306P	Physical Pharmaceutics I – Practical	4/60	-	2
BP307P	Pharmaceutical Microbiology – Practical	4/60	-	2
BP 308P	Pharmaceutical Engineering – Practical	4/60	-	2
Total		28/420	4	24




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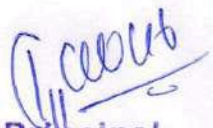


RULES & SYLLABUS

FIRST YEAR BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2018-2019)




Principal
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Semester III

Course code	Name of the course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BP301T	Pharmaceutical Organic Chemistry II – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP302T	PhysicalPharmaceuticsI –Theory	10	15	1 Hr	25	75	3 Hrs	100
BP303T	Pharmaceutical Microbiology – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP304T	Pharmaceutical Engineering – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP305P	Pharmaceutical Organic Chemistry II – Practical	5	10	4 Hr	15	35	4 Hrs	50
BP306P	Physical Pharmaceutics I – Practical	5	10	4 Hr	15	35	4 Hrs	50
BP307P	Pharmaceutical Microbiology – Practical	5	10	4 Hr	15	35	4 Hrs	50
BP308P	Pharmaceutical Engineering – Practical	5	10	4 Hr	15	35	4 Hrs	50
Total		60	100	20	160	440	28Hrs	600




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Semester IV

Course code	Name of the course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BP401T	Pharmaceutical Organic Chemistry III- Theory	10	15	1 Hr	25	75	3 Hrs	100
BP402T	Medicinal Chemistry I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP403T	Physical Pharmaceutics II – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP404T	Pharmacology I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP405T	Pharmacognosy I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP406P	Medicinal Chemistry I – Practical	5	10	4 Hr	15	35	4 Hrs	50
BP407P	Physical Pharmaceutics II – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP408P	Pharmacology I – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP409P	Pharmacognosy I – Practical	5	10	4 Hrs	15	35	4 Hrs	50
Total		70	115	21 Hrs	185	515	31 Hrs	700




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SAVITRIBAI PHULE PUNE UNIVERSITY

FACULTY OF PHARMACEUTICAL SCIENCES



COURSE STRUCTURE & SYLLABI

BACHELOR OF PHARMACY (B. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2015-16)

Credit and Grading Based Semester System



1

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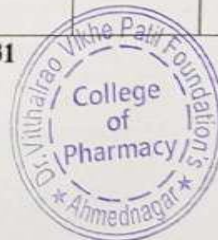
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Vilad Ghat, Ahmednagar**

Semester-V

Class- Third Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
3.5.1 T	Industrial Pharmacy-I	3	3	3	60	24	1.5	20	20	100	40
3.5.1 P	Industrial Pharmacy-I	3	2	4	60	24	3	20	20	100	40
3.5.2 T	Pharmaceutical Analysis-III	3	3	3	60	24	1.5	20	20	100	40
3.5.2 P	Pharmaceutical Analysis-III	3	2	4	60	24	3	20	20	100	40
3.5.3 T	Medicinal Chemistry-I	3	3	3	60	24	1.5	20	20	100	40
3.5.3 P	Medicinal Chemistry-I	3	2	4	60	24	3	20	20	100	40
3.5.4 T	Pharmacology-II	3	3	3	60	24	1.5	20	20	100	40
3.5.4 P	Pharmacology-II	3	2	4	60	24	3	20	20	100	40
3.5.5 T	Analytical Pharmacognosy & Extraction Technology	3	3	3	60	24	1.5	20	20	100	40
3.5.5 P	Analytical Pharmacognosy & Extraction Technology	3	2	4	60	24	3	20	20	100	40
3.5.6 T	Pharmaceutical Business Management & Disaster Management	3	3	3	60	24	1.5	20	20	100	40
3.5.7 T	Active Pharmaceutical Ingredients Technology	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



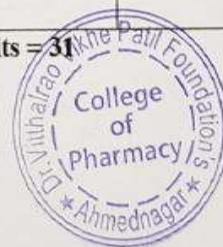
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Semester-VI

Class- Third Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
3.6.1 T	Industrial Pharmacy-II	3	3	3	60	24	1.5	20	20	100	40
3.6.1 P	Industrial Pharmacy-II	3	2	4	60	24	3	20	20	100	40
3.6.2 T	Pharmaceutical Analysis-IV	3	3	3	60	24	1.5	20	20	100	40
3.6.2 P	Pharmaceutical Analysis-IV	3	2	4	60	24	3	20	20	100	40
3.6.3 T	Medicinal Chemistry-II	3	3	3	60	24	1.5	20	20	100	40
3.6.3 P	Medicinal Chemistry-II	3	2	4	60	24	3	20	20	100	40
3.6.4 T	Pharmacology-III	3	3	3	60	24	1.5	20	20	100	40
3.6.4 P	Pharmacology-III	3	2	4	60	24	3	20	20	100	40
3.6.5 T	Natural Product Chemistry	3	3	3	60	24	1.5	20	20	100	40
3.6.5 P	Natural Product Chemistry	3	2	4	60	24	3	20	20	100	40
3.6.6 T	Bioorganic Chemistry & Drug Design	3	3	3	60	24	1.5	20	20	100	40
3.6.7 T	Pharmaceutical Biotechnology	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



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Semester-VII

Class- Final Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
4.7.1 T	Sterile Products	3	3	3	60	24	1.5	20	20	100	40
4.7.1 P	Sterile Products	3	2	4	60	24	3	20	20	100	40
4.7.2 T	Pharmaceutical Analysis-V	3	3	3	60	24	1.5	20	20	100	40
4.7.2 P	Pharmaceutical Analysis-V	3	2	4	60	24	3	20	20	100	40
4.7.3 T	Medicinal Chemistry-III	3	3	3	60	24	1.5	20	20	100	40
4.7.3 P	Medicinal Chemistry-III	3	2	4	60	24	3	20	20	100	40
4.7.4 T	Pharmacology-IV	3	3	3	60	24	1.5	20	20	100	40
4.7.4 P	Pharmacology-IV	3	2	4	60	24	3	20	20	100	40
4.7.5 T	Natural Drug Technology	3	3	3	60	24	1.5	20	20	100	40
4.7.5 P	Natural Drug Technology	3	2	4	60	24	3	20	20	100	40
4.7.6 T	Bio-pharmaceutics & Pharmacokinetics	3	3	3	60	24	1.5	20	20	100	40
4.7.7 T	Pharmaceutical Jurisprudence	3	3	3	60	24	1.5	20	20	100	40

Total Credits = 31



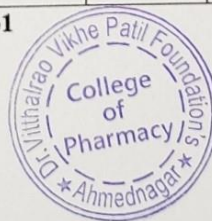
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Semester-VIII

Class- Final Yr. B. Pharmacy

Subject Code	Subject	Scheme of Teaching Hrs/Weeks	Scheme of Credit	End Semester Examination			Internal Examination			Total Maximum Marks for subject	Minimum marks for passing subject
				Duration (Hours)	Maximum marks	Min for passing	Duration (Hours)	Maximum marks	Continuous Assessment marks		
4.8.1 T	Advanced Drug Delivery System	3	3	3	60	24	1.5	20	20	100	40
4.8.1 P	Advanced Drug Delivery System	3	2	4	60	24	3	20	20	100	40
4.8.2 T	Cosmetic science	3	3	3	60	24	1.5	20	20	100	40
4.8.2 P	Cosmetic science	3	2	4	60	24	3	20	20	100	40
4.8.3 T	Pharmaceutical Analysis-VI	3	3	3	60	24	1.5	20	20	100	40
4.8.3 P	Pharmaceutical Analysis-VI	3	2	4	60	24	3	20	20	100	40
4.8.4 T	Medicinal Chemistry-IV	3	3	3	60	24	1.5	20	20	100	40
4.8.4 P	Medicinal Chemistry-IV	3	2	4	60	24	3	20	20	100	40
4.8.5 T	Pharmacology-V(Including Biostatistics)	3	3	3	60	24	1.5	20	20	100	40
4.8.5 P	Pharmacology-V(Including Biostatistics)	3	2	4	60	24	3	20	20	100	40
4.8.6 T	Natural Products: Commerce, Industry & Regulations	3	3	3	60	24	1.5	20	20	100	40
4.8.7 T	Quality Assurance Tech.	3	3	3	60	24	1	20	20	100	40

Total Credits = 31



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SAVITRIBAI PHULE PUNE UNIVERSITY

FACULTY OF SCIENCE AND TECHNOLOGY



RULES & SYLLABUS

FIRST YEAR MASTER OF PHARMACY (M. Pharm.) COURSE

(EFFECTIVE FROM ACADEMIC YEAR 2019-2020)





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Table - 4: Course of study for M. Pharm. (Pharmaceutical Chemistry)

Course Code	Course	Credit Hours	Credit Points	Hrs./week	Marks
SEMESTER I					
MPAT101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPC1012T	Advanced Organic Chemistry – I	4	4	4	100
MPC103T	Advanced Medicinal Chemistry	4	4	4	100
MPC104T	Chemistry of Natural Products	4	4	4	100
MPC105P	Pharmaceutical Chemistry Practical I	12	6	12	150
-	Seminar / Assignment	7	4	7	100
Total		35	26	35	650
SEMESTER II					
MPC201T	Advanced Spectral Analysis	4	4	4	100
MPC202T	Advanced Organic Chemistry –II	4	4	4	100
MPC203T	Computer Aided Drug Design	4	4	4	100
MPC204T	Pharmaceutical Process Chemistry	4	4	4	100
MPC205P	Pharmaceutical Chemistry Practical II	12	6	12	150
-	Seminar / Assignment	7	4	7	100
Total		35	26	35	650



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Table - 6: Course of study for M. Pharm. (Pharmaceutical Quality Assurance)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
SEMESTER I					
MPAT101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MQA102T	Quality Management System	4	4	4	100
MQA103T	Quality Control and Quality Assurance	4	4	4	100
MQA104T	Product Development and Technology Transfer	4	4	4	100
MQA105P	Pharmaceutical Quality Assurance Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
SEMESTER II					
MQA201T	Hazards and Safety Management	4	4	4	100
MQA202T	Pharmaceutical Validation	4	4	4	100
MQA203T	Audits and Regulatory Compliance	4	4	4	100
MQA204T	Pharmaceutical Manufacturing Technology	4	4	4	100
MQA205P	Pharmaceutical Quality Assurance Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650





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Table - 10: Course of study for (Pharmacology)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
SEMESTER I					
MPAT101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPL102T	Advanced Pharmacology - I	4	4	4	100
MPL 103T	Pharmacological and Toxicological Screening Methods-I	4	4	4	100
MPL104T	Cellular and Molecular Pharmacology	4	4	4	100
MPL105P	Pharmacology Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
SEMESTER II					
MPL201T	Advanced Pharmacology II	4	4	4	100
MPL 202T	Pharmacological and Toxicological Screening Methods-II	4	4	4	100
MPL203T	Principles of Drug Discovery	4	4	4	100
MPL204T	Clinical Research and Pharmacovigilance	4	4	4	100
MPL205P	Pharmacology Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650





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Table - 2: Course of study for M. Pharm. (Pharmaceutics)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
SEMESTER I					
MPAT101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPH102T	Drug Delivery System	4	4	4	100
MPH103T	Modern Pharmaceutics	4	4	4	100
MPH104T	Regulatory Affair	4	4	4	100
MPH105P	Pharmaceutics Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
SEMESTER II					
MPH201T	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	4	4	4	100
MPH202T	Advanced Biopharmaceutics & Pharmacokinetics	4	4	4	100
MPH203T	Computer Aided Drug Development	4	4	4	100
MPH204T	Cosmetic & Cosmeceuticals	4	4	4	100
MPH205P	Pharmaceutics Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650



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**Table - 12: Course of study for M. Pharm. III Semester
(Common for All Specializations)**

Course Code	Course	Credit Hours	Credit Points
MRM 301T	Research Methodology and Biostatistics*	4	4
-	Journal club	1	1
-	Discussion / Presentation (Proposal Presentation)	2	2
-	Research Work	28	14
Total		35	21

* Non University Exam

**Table - 13: Course of study for M. Pharm. IV Semester
(Common for All Specializations)**

Course Code	Course	Credit Hours	Credit Points
-	Journal Club	1	1
-	Research Work	31	16
-	Discussion/Final Presentation	3	3
Total		35	20

Table - 14: Semester wise credits distribution

Semester	Credit Points
I	26
II	26
III	21
IV	20
Co-curricular Activities (Attending Conference, Scientific Presentations and Other Scholarly Activities)	Minimum=02 Maximum=07*
Total Credit Points	Minimum=95 Maximum=100*

*Credit Points for Co-curricular Activities



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