

# 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)**



  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033

## 7. Program / Course credit structure

As per the philosophy of Credit Based Semester System, certain quantum of academic work viz. theory classes, practical classes, seminars, assignments, etc. are measured in terms of credits. On satisfactory completion of the courses, a candidate earns credits. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly the credit associated with any of the other academic, co/extra-curricular activities is dependent upon the quantum of work expected to be put in for each of these activities per week / per activity.

### 7.1 Credit assignment

#### Theory and Laboratory courses

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and Practical (P) courses consist of hours spent in the laboratory. Credits (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for lecture and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having four lectures per week throughout the semester carries a credit of 4. Similarly, a practical having four laboratory hours per week throughout semester carries a credit of 2.

The contact hours of seminars, assignments and research work shall be treated as that of practical courses for the purpose of calculating credits, i.e., the contact hours shall be multiplied by 1/2. Similarly, the contact hours of journal club, research work presentations and discussions with the supervisor shall be considered as theory course and multiplied by 1.

#### Minimum credit requirements

The minimum credit points required for the award of M. Pharm. degree is 95. However based on the credit points earned by the students under the head of co-curricular activities, a student shall earn a maximum of 100 credit points. These credits are divided into Theory courses, Practical, Seminars, Assignments, Research work, Discussions with the supervisor, Journal club and Co-Curricular activities over the duration of four semesters. The credits are distributed semester-wise as shown in Table 14. Courses generally progress in sequence, building competencies and their positioning indicates certain academic maturity on the part of the learners. Learners are expected to follow the semester-wise schedule of courses given in the syllabus.

## 8. Academic work

A regular record of attendance both in Theory, Practical, Seminar and Assignment and Journal club, Discussion with the supervisor, Research work presentation and Dissertation shall be maintained by the department / teaching staff of respective courses.

## 9. Course of study

The specializations in M.Pharm program is given in Table 1.





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

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
<b>SEMESTER I</b>					
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
<b>Total</b>		<b>35</b>	<b>26</b>	<b>35</b>	<b>650</b>
<b>SEMESTER II</b>					
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
<b>Total</b>		<b>35</b>	<b>26</b>	<b>35</b>	<b>650</b>



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

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
<b>SEMESTER I</b>					
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
<b>Total</b>		<b>35</b>	<b>26</b>	<b>35</b>	<b>650</b>
<b>SEMESTER II</b>					
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
<b>Total</b>		<b>35</b>	<b>26</b>	<b>35</b>	<b>650</b>





Table - 11: Course of study for M. Pharm. (Pharmacognosy)

Course Code	Course	Credit Hours	Credit Points	Hrs./week	Marks
<b>SEMESTER I</b>					
MPAT101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPG102T	Advanced Pharmacognosy-I	4	4	4	100
MPG103T	Phytochemistry	4	4	4	100
MPG104T	Industrial Pharmacognostical Technology	4	4	4	100
MPG105P	Pharmacognosy Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
<b>Total</b>		<b>35</b>	<b>26</b>	<b>35</b>	<b>650</b>
<b>SEMESTER II</b>					
MPG201T	Medicinal Plant biotechnology	4	4	4	100
MPG102T	Advanced Pharmacognosy – II	4	4	4	100
MPG203T	Indian system of medicine	4	4	4	100
MPG204T	Herbal cosmetics	4	4	4	100
MPG205P	Pharmacognosy Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
<b>Total</b>		<b>35</b>	<b>26</b>	<b>35</b>	<b>650</b>



**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
<b>Total</b>		<b>35</b>	<b>21</b>

\* 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
<b>Total</b>		<b>35</b>	<b>20</b>

**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*
<b>Total Credit Points</b>	Minimum=95 Maximum=100*

\*Credit Points for Co-curricular Activities





### Seminar/Assignment

1. **Seminar:** The evaluation of seminar for semester I & II shall be carried out as per following scheme.

- |   |                       |
|---|-----------------------|
| a. Reference work and scientific contents | ----- 10 marks        |
| b. Communication skill                    | ----- 05 marks        |
| c. Discussion/defense                     | ----- 05 marks        |
| d. Presentation                           | ----- 30 marks        |
| <b>Total</b>                              | <b>----- 50 marks</b> |

2. **Assignment:** one assignment related to any topic from the specialization shall be conducted in semester I and II.

Evaluation criteria for assignment are as follows:

- |  |                       |
|--|-----------------------|
| a. Structure, organization and content | ----- 20 marks        |
| b. Creativity and originality          | ----- 05 marks        |
| c. Compilation of information          | ----- 10 marks        |
| d. Literature resources                | ----- 10 marks        |
| e. Reference style                     | ----- 05 marks        |
| <b>Total</b>                           | <b>----- 50 marks</b> |

Tables - 26: Schemes for internal assessments and end semester examinations (Semester III& IV)

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER III</b>								
MRM30 IT	Research methodology and Biostatistics*	10	15	1 Hr	25	75	3 Hrs	100
-	Journal club	-	-	-	25	-	-	25
-	Discussion / Presentation (Proposal Presentation)	-	-	-	50	-	-	50
-	Research work*	-	-	-	-	350	1 Hr	350
<b>Total</b>								<b>525</b>
<b>SEMESTER IV</b>								
-	Journal club	-	-	-	25	-	-	25
-	Discussion / Presentation (Proposal Presentation)	-	-	-	75	-	-	75
-	Research work and Colloquium	-	-	-	-	400	1 Hr	400
<b>Total</b>								<b>500</b>

\*Non University Examination



**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**  
**Marathwada Mitra Mandal's**  
**COLLEGE OF PHARMACY**  
**Thergaon (Kalewadi), Pune-411 033**



### 9. Course of study

The course of study for B. Pharm shall include Semester Wise Theory & Practical as given in Table – I to VIII. The number of hours to be devoted to each theory, tutorial and practical course in any semester shall not be less than that shown in Table – I to VIII.

**Table-I: Course of study for semester I**


Course code	Name of the course	No. of hours	Tutorial	Credit points
BP101T	Human Anatomy and Physiology I – Theory	3	1	4
BP102T	Pharmaceutical Analysis I – Theory	3	1	4
BP103T	Pharmaceutics I – Theory	3	1	4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3	1	4
BP105T	Communication skills – Theory *	2	-	2
BP106RBT	Remedial Biology/	2	-	2
BP106RMT	Remedial Mathematics – Theory*			
BP107P	Human Anatomy and Physiology – Practical	4	-	2
BP108P	Pharmaceutical Analysis I – Practical	4	-	2
BP109P	Pharmaceutics I – Practical	4	-	2
BP110P	Pharmaceutical Inorganic Chemistry – Practical	4	-	2
BP111P	Communication skills – Practical*	2	-	1
BP112RBP	Remedial Biology – Practical*	2	-	1
<b>Total</b>		<b>32/34<sup>S</sup>/36<sup>P</sup></b>	<b>4</b>	<b>27/29<sup>S</sup>/30<sup>P</sup></b>

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

<sup>P</sup>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)



  
**PRINCIPAL**  
Marathwada Mitra Mandai's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033

**Table-II: Course of study for semester II**

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

\*Non University Examination (NUE)

**Table-III: Course of study for semester III**

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



  
**PRINCIPAL**  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalowadi), Pune-411 033




**Table-IV: Course of study for semester IV**

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP401T	Pharmaceutical Organic Chemistry III- Theory	3	1	4
BP402T	Medicinal Chemistry I - Theory	3	1	4
BP403T	Physical Pharmaceutics II - Theory	3	1	4
BP404T	Pharmacology I - Theory	3	1	4
BP405T	Pharmacognosy and Phytochemistry I- Theory	3	1	4
BP406P	Medicinal Chemistry I - Practical	4	-	2
BP407P	Physical Pharmaceutics II - Practical	4	-	2
BP408P	Pharmacology I - Practical	4	-	2
BP409P	Pharmacognosy and Phytochemistry I - Practical	4	-	2
<b>Total</b>		<b>31</b>	<b>5</b>	<b>28</b>

**Table-V: Course of study for semester V**

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP501T	Medicinal Chemistry II - Theory	3	1	4
BP502T	Formulative Pharmacy- Theory	3	1	4
BP503T	Pharmacology II - Theory	3	1	4
BP504T	Pharmacognosy and Phytochemistry II- Theory	3	1	4
BP505T	Pharmaceutical Jurisprudence - Theory	3	1	4
BP506P	Formulative Pharmacy - Practical	4	-	2
BP507P	Pharmacology II - Practical	4	-	2
BP508P	Pharmacognosy and Phytochemistry II - Practical	4	-	2
<b>Total</b>		<b>27</b>	<b>5</b>	<b>26</b>



  
**PRINCIPAL**

Marathwada Mitra Mandal's  
**COLLEGE OF PHARMACY**  
 Thergaon (Kalsowadi), Pune-411 033

**Table-VI: Course of study for semester VI**

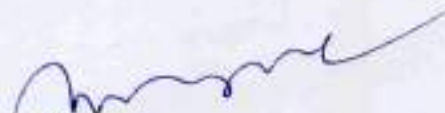
Course code	Name of the course	No. of hours	Tutorial	Credit points
BP601T	Medicinal Chemistry III – Theory	3	1	4
BP602T	Pharmacology III – Theory	3	1	4
BP603T	Herbal Drug Technology – Theory	3	1	4
BP604T	Biopharmaceutics and Pharmacokinetics – Theory	3	1	4
BP605T	Pharmaceutical Biotechnology – Theory	3	1	4
BP606T	Quality Assurance – Theory	3	1	4
BP607P	Medicinal chemistry III – Practical	4	-	2
BP608P	Pharmacology III – Practical	4	-	2
BP609P	Herbal Drug Technology – Practical	4	-	2
<b>Total</b>		<b>30</b>	<b>6</b>	<b>30</b>

**Table-VII: Course of study for semester VII**

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP701T	Instrumental Methods of Analysis – Theory	3	1	4
BP702T	Industrial Pharmacy – Theory	3	1	4
BP703T	Pharmacy Practice – Theory	3	1	4
BP704T	Novel Drug Delivery System – Theory	3	1	4
BP705P	Instrumental Methods of Analysis – Practical	4	-	2
BP706PS	Practice School*	12	-	6
<b>Total</b>		<b>28</b>	<b>5</b>	<b>24</b>

\* Non University Examination (NUE)



  
**PRINCIPAL**  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalewadi), Pune-411 033



**Table-VIII: Course of study for semester VIII**

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP801T	Biostatistics and Research Methodology	3	1	4
BP802T	Social and Preventive Pharmacy	3	1	4
BP803ET	Pharmaceutical Marketing	3 + 3 = 6	1 + 1 = 2	4 + 4 = 8
BP804ET	Pharmaceutical Regulatory Science			
BP805ET	Pharmacovigilance			
BP806ET	Quality Control and Standardizations of Herbals			
BP807ET	Computer Aided Drug Design			
BP808ET	Cell and Molecular Biology			
BP809ET	Cosmetic Science			
BP810ET	Experimental Pharmacology			
BP811ET	Advanced Instrumentation Techniques			
BP812PW	Project Work	12	-	6
<b>Total</b>		<b>24</b>	<b>4</b>	<b>22</b>

**Table-IX: Semester wise credits distribution**

Semester	Credit Points
I	27/29 <sup>5</sup> /30 <sup>6</sup>
II	29
III	26
IV	28
V	26
VI	26
VII	24
VIII	22
Extracurricular/ Co curricular activities	01*
<b>Total credit points for the program</b>	<b>209/211<sup>5</sup>/212<sup>6</sup></b>

\* The credit points assigned for extracurricular and or co-curricular activities shall be given by the Principals of the colleges and the same shall be submitted to the University. The criteria to acquire this credit point shall be defined by the colleges from time to time.

<sup>5</sup>Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics course.

<sup>6</sup>Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology course.



### 11.2. Internal assessment: Continuous mode

The marks allocated for Continuous mode of Internal Assessment shall be awarded as per the scheme given below.

**Table-XI: Scheme for awarding internal assessment: Continuous mode**

Theory		
Criteria	Maximum Marks	
Attendance (Refer Table – XII)	4	2
Academic activities (Average of any 3 activities e.g. quiz, assignment, open book test, field work, group discussion and seminar)	3	1.5
Student – Teacher interaction	3	1.5
<b>Total</b>	<b>10</b>	<b>5</b>
Practical		
Attendance (Refer Table – XII)	2	
Based on Practical Records, Regular viva voce, etc.	3	
<b>Total</b>	<b>5</b>	

**Table- XII: 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

#### 11.2.1. Sessional Exams

Two Sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the college(s). 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 tables – X.

Sessional exam shall be conducted for 30 marks for theory 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.

#### Question paper pattern for theory Sessional examinations

##### For subjects having University examination

I. Multiple Choice Questions (MCQs) (Answer all the questions)	=	10 x 1 = 10
I. Long Answers (Answer 1 out of 2)	=	1 x 10 = 10
II. Short Answers (Answer 2 out of 3)	=	2 x 5 = 10
		-----
Total	=	30 marks



  
**PRINCIPAL**  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Dahanu Road, Dahanu - 431 003



**SAVITRIBAI PHULE PUNE UNIVERSITY**

**FACULTY OF SCIENCE AND TECHNOLOGY**

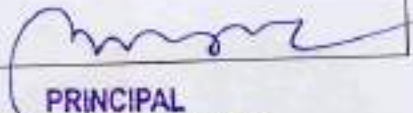


**RULES & SYLLABUS**

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

**(EFFECTIVE FROM ACADEMIC YEAR 2018-2019)**



  
**PRINCIPAL**  
**Marathwada Mitra Mandal's**  
**COLLEGE OF PHARMACY**  
**Thergaon (Kalewadi), Pune-411 033**

## 6. Attendance and progress

A candidate is required to put in at least 80% attendance in individual courses considering theory and practical separately. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations.

## 7. Program/Course credit structure

As per the philosophy of Credit Based Semester System, certain quantum of academic work viz. theory classes, practical classes, seminars, assignments, etc. are measured in terms of credits. On satisfactory completion of the courses, a candidate earns credits. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly the credit associated with any of the other academic, co-extra-curricular activities is dependent upon the quantum of work expected to be put in for each of these activities per week/per activity.

### 7.1. Credit assignment

#### 7.1.1. Theory and Laboratory courses

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and Practical (P) courses consist of hours spent in the laboratory. Credits (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for lecture and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having four lectures per week throughout the semester carries a credit of 4. Similarly, a practical having four laboratory hours per week throughout semester carries a credit of 2.

The contact hours of seminars, assignments and research work shall be treated as that of practical courses for the purpose of calculating credits. i.e., the contact hours shall be multiplied by 1/2. Similarly, the contact hours of journal club, research work presentations and discussions with the supervisor shall be considered as theory course and multiplied by 1.

### 7.2. Minimum credit requirements

The minimum credit points required for the award of M. Pharm. degree is 95. However based on the credit points earned by the students under the head of co-curricular activities, a student shall earn a maximum of 100 credit points. These credits are divided into Theory courses, Practical, Seminars, Assignments, Research work, Discussions with the supervisor, Journal club and Co-Curricular activities over the duration of four semesters. The credits





are distributed semester-wise as shown in Table 14. Courses generally progress in sequence, building competencies and their positioning indicates certain academic maturity on the part of the learners. Learners are expected to follow the semester-wise schedule of courses given in the syllabus.

#### 8. Academic work

A regular record of attendance both in Theory, Practical, Seminar, Assignment, Journal club, Discussion with the supervisor, Research work presentation and Dissertation shall be maintained by the department teaching staff of respective courses.

#### 9. Course of study

The specializations in M.Pharm program is given in Table 1.

Table - 1: List of M.Pharm. Specializations and their Code

S. No.	Specialization	Code
1.	Pharmaceutics	MPH
2.	Industrial Pharmacy	MIP
3.	Pharmaceutical Chemistry	MPC
4.	Pharmaceutical Analysis	MPA
5.	Pharmaceutical Quality Assurance	MQA
6.	Pharmaceutical Regulatory Affairs	MRA
7.	Pharmaceutical Biotechnology	MPB
8.	Pharmacy Practice	MPP
9.	Pharmacology	MPL
10.	Pharmacognosy	MPG

The course of study for M.Pharm specializations shall include Semester wise Theory & Practical as given in Table - 2 to 11. The number of hours to be devoted to each theory and practical course in any semester shall not be less than that shown in Table - 2 to 11.



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

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	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





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



PRINCIPAL

Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY

Thane - Maharashtra - Dist. Dhule - 431 033

Table - 11: Course of study for M. Pharm. (Pharmacognosy)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
Semester I					
MPG101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPG102T	Advanced Pharmacognosy-I	4	4	4	100
MPG103T	Phytochemistry	4	4	4	100
MPG104T	Industrial Pharmacognostical Technology	4	4	4	100
MPG105P	Pharmacognosy Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
Semester II					
MPG201T	Medicinal Plant biotechnology	4	4	4	100
MPG102T	Advanced Pharmacognosy-II	4	4	4	100
MPG203T	Indian system of medicine	4	4	4	100
MPG204T	Herbal cosmetics	4	4	4	100
MPG205P	Pharmacognosy Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650



*[Signature]*



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



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

  
**PRINCIPAL**  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033



*Clarifications:*

- Learner having ATKT will appear for examinations in only those subject heads in which the learner has failed except stated below.
- The learner who has passed in all the subjects but failed due to not getting overall CGPA 5 will be allowed to appear in any number of subject heads (theory) desired by the learner.
- For all the remaining cases, the learner has to appear for examination in all those subject heads in which the learner failed.

**R.3.4. Sessional Examinations**

- Each Semester will consist of a minimum of 15 weeks instructions.  
\*i.e.  $15 \times 6 = 90$  instructional days (minimum instructional days)
- 75% attendance for both theory and practical classes separately shall be mandatory to appear for sessional examination and end semester examination.
- Conducting authority shall be Institutes where learner is admitted.
- **In- semester assessment** will be of 40 marks which includes 20 marks for theory and practical sessional and 20 marks for continuous assessment for theory and practical. In-semester assessment of 20 marks should be continuous, procedures and marks for theory and practical examination are as follows -
  - i. For theory and practical Examination - In-semester assessment for 20 marks should be continuous and at least two tests should be conducted for full course of 3 credits for theory and 2 credits for practical and the teacher must select a variety of procedures for examination such as :
    - a) Written test and / or midterm test (not more than one or two for each course)
    - b) Term paper
    - c) Journal / Lecture / Library notes
    - d) Seminar presentation
    - e) Short Quizzes
    - f) Assignments
    - g) **Extension work**



h) An open book test (with the concern teacher deciding what books are to be allowed for this purpose)

or

i) Mini research project by individual learner or group of learners

The concern teacher in consultation with the head of Department shall decide the nature of question for the unit test.

*Number of Sessional Examination:*

- There will be a minimum of one sessional examination of 20 marks conducted in each semester after minimum eight weeks of teaching from the date of commencement of that semester in each of the theory subjects during the semester.
- One Sessional Examination will be conducted as per the examination scheme (See Annexure no. I) for each semester. The learner who will secure less than 40% mark in the Sessional Examination or unable to appear for the scheduled Sessional Examination may be permitted for the Sessional Examination in the same semester only if approved by institutional examination committee and paying fees as prescribed by the institution. The institutional examination committee shall consist of Principal (Chairman), & four teachers nominated by the Principal.
- Practical sessional examination of 20 marks will be based on internal assessment of practical (Experimental work), viva, synopsis and laboratory record. The distribution of marks for practical examination will be as follows -

**Scheme for Practical Sessional Examination**

Sr. No.	Head	Marks distribution
1	Experimental work	10
2	Synopsis & Viva	06
3	Lab Record	04
	Total Marks	20
	Duration	03 Hrs.

- Daily assessment of practicals will be based on day to day attendance, learners' skills (performance), viva, laboratory record, etc.
- Theory sessional examination of 20 marks will be conducted after completion of at least two thirds syllabus of the semester.
- The distribution of marks for theory sessional examination will be as given below.



  
**PRINCIPAL**  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033




of performance will be considered. For example if the learner gets over all CGPA or SGPA of '5' but fails in one of the subject heads in which the learner had passed earlier, the learner will be treated as passed in that subject head as per previous examination and result will be declared as per the rules applicable to the passed learners. The marks of the subject head in which the learner has not appeared for the examination will be carried forward.

#### **R.5.9. Professional / Industrial Training**

Every learner shall be required to work for at least four weeks in a Pharmaceutical Industry it includes Production unit, Q. C department, Q. A department, analytical laboratory, chemical manufacturing unit, pharmaceutical R & D, hospital (Clinical Pharmacy), clinical research organization and wholesale drug store etc after the Semester- IV of the course of study, and shall submit satisfactory report of such work form industry to the head of the institute. The learner should also submit one copy to the University for the Award of Degree along with convocation form. The learner may undergo practical training in parts, each constituting not less than two weeks.



  
**PRINCIPAL**  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033


## R-6: ENVIRONMENTAL SCIENCES

An additional course in environmental sciences shall be conducted as per following guidelines.

1. A course in Environmental Awareness with duration of six months (30 lectures of one hour duration & field work of 10 hours duration.) shall be introduced at the semester III of second year of degree course B.Pharm as a compulsory course.
2. An additional course fee of Rs. 1000 per learner shall be charged to meet the expenditure on the conduct of the course.
3. A course Coordinator shall be appointed to organize teaching and evaluation by the Principal.
4. Qualifications of a Teacher.  
University approved teacher (minimum Asst. Prof.) or expert in Environmental Sciences possessing substantial knowledge to teach a course on environmental studies shall be eligible to teach the course. Principal of the College shall be authorized to determine the eligibility of the teacher on environmental studies. This course is to be introduced from the second year B. Pharm.
5. The college on behalf of the University shall conduct the examination of this subject immediately before or after Semester examinations of S.Y./T.Y./Final Year B.Pharm.
6. The learner should clear this subject before passing the Final Year B. Pharm examination.
7. A learner has to pass in this course in order to obtain degree certificate. If the learner passes in all subjects of degree course but fails in this paper, he will not be eligible to obtain degree certificate.
8. Examination: the College shall organize the evaluation as per pattern suggested below.

The Principal shall submit the result sheet to the Controller of Examination, Savitribai Phule Pune University, Pune on or before the end of the final year University Examinations of B. Pharm. course. The results of University examination of the learner who fail to get Minimum 'C' Grade in this course shall be kept in



  
**PRINCIPAL**  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaan (Kalewadi), Pune-411 033



reserve till the concerned learner complete the course and secure to require Minimum C Grade.

The question paper shall include the questions as under

- A. Multiple choice questions :50 Marks
- B. Essay type questions :25 Marks
- C. Field works :25 Marks

Total: 100 Marks Passing Marks: 40 Marks.

Following Grades shall be awarded to the learners based on their marks obtained.

**Grade-O:** above 75    **Grade-A:** 61 to 75    **Grade-B:** 51 to 60    **Grade-C:** 40 to 50

#### **R-7: Rules for Carry Forward**

This revised curriculum (including regulations, structure and syllabi) will be in force from academic year 2015-16 and onwards for First Year B. Pharm. for academic year 2016-17 onwards for Second Year B. Pharm., for academic year 2017-18 and onwards for Third Year B. Pharm., and for academic year 2018-19 and onwards for Final Year B. Pharm.

1. The learners who were admitted to First Year B. Pharm. of 2013 pattern during the academic year 2014-15 or before & would fail or have failed in the First Year B. Pharm. of 2013 pattern examination will have to take admission to Semester-III of Second Year B. Pharm. of 2015 pattern in academic year 2016-17 or onwards, provided that
  - a. Their result of F. Y. B. Pharm of 2013 pattern is either pass or fails with A. T. K. T.
2. The learners who will be admitted to Second Year B. Pharm. of 2013 pattern during academic year 2015-16 and who will fail in the Second Year B. Pharm. 2013 pattern



  
**PRINCIPAL**  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi, Puna) 411 033

**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**



  
**PRINCIPAL**  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalewadi), Pune-411 033




## 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



  
 PRINCIPAL  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalewadi), Pune-411 033

## 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



  
**PRINCIPAL**  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY,  
 Thergaon (Kaitwadli), Pune-411006.



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



## 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



  
 PRINCIPAL  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalewadi), Pune-411 033



## 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



  
 PRINCIPAL  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalewadi), Pune-411 033

## 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



  
 PRINCIPAL  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon (Kalewadi), Pune-411 033



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



UNIVERSITY OF PUNE

FACULTY OF PHARMACEUTICAL SCIENCES



COURSE STRUCTURE & SYLLABI

**BACHELOR OF PHARMACY (B. Pharm.) COURSE**

**(EFFECTIVE FROM ACADEMIC YEAR 2013-14)**



1

  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033



may be permitted for the Sessional Examination in the same semester only if approved by institutional examination committee and paying fees as prescribed by the institution.

- Practical sessional examination of 30 marks will be based on internal assessment of practical, day to day attendance, viva and laboratory record. The distribution of marks for practical examination will be as follows –

**Scheme for Practical Sessional Examination**

Sr. No.	Head	Marks distribution
1	Performance	15
2	Synopsis & Viva	09
3	Lab Record and Attendance	06
	Total Marks	30
	Duration	03 Hrs.

- Internal assessment of practicals will be based on day to day attendance, viva, laboratory record, etc.
- The institutional examination committee shall consist of Principal (Chairman), & four teachers nominated by the Principal.
  - Theory sessional examination of 30 marks will be conducted after completion of at least two thirds syllabus of the semester.
  - The distribution of marks for theory sessional examination will be as given below-

Sr. No.	Head	Marks distribution
Q. 1	2marks X 5 questions (out of seven)	= 10 marks
Q. 2	5marks X 2 questions (out of three)	= 10 marks
Q. 3	10marks X 1 questions (out of two)	= 10 marks
	Total	= 30 marks

*Time Schedule:*

**The time schedule for theory sessional examination will be 1 hour 30 minutes.**

- The Retest/ Improvement test/ or supplementary test for the Sessional Examinations will be allowed for the failed candidates in the University examination, if he/she is appearing for the University exam of that subject head.



Notwithstanding above if a candidate has passed in all the subjects but failed due to not getting 50% of the aggregate marks may appear for the examination in any three theory subject heads so as to get over all 50% marks. In such cases, Higher marks obtained in the subject heads, the candidate has appeared for the fresh examination and the marks obtained in the previous examination of the same subject will only be considered irrespective of the examination and fresh result will be declared. For example if the candidate gets over all 50% marks but fails in one of the subject heads in which the candidate had passed earlier, the candidate will be treated as passed in that subject head as per previous examination and result will be declared as per the rules applicable to the passed candidates. The marks in which the candidate has not appeared for the examination will be carried forward.

#### **R.5.6. Industrial Training**

Every candidate shall be required to work for at least four weeks in a Pharmaceutical Industry it includes Production unit, Q. C department, Q. A department, analytical laboratory, chemical manufacturing unit, pharmaceutical R & D, hospital (Clinical Pharmacy), clinical research organization and wholesale drug store etc after the Semester- IV of the course of study, and shall submit satisfactory report of such work to the head of the institute. The candidate should also submit one copy to the University for the Award of Degree along with convocation form. The candidate may undergo practical training in parts, each constituting not less than two weeks.

#### **R.5.7.**

**The pattern for University theory examination question paper shall be as given below:**

Scheme for theory Examination: - Each Theory paper should be divided in 2 sections which should be attempted in separate answer sheet.





## R-6: ENVIRONMENTAL SCIENCES

An additional course in environmental sciences shall be conducted as per following guidelines.

1. A course in Environmental Awareness with duration of six months (30 lectures of one hour duration & field work of 10 hours duration.) shall be introduced at the semester III of second year of degree course B.Pharm as a compulsory course.
2. An additional course fee of Rs. 1000 per student shall be charged to meet the expenditure on the conduct of the course.
3. A course Coordinator shall be appointed to organize teaching and evaluation by the Principal.
4. Qualifications of a Teacher.  
University approved teacher (minimum Asst. Prof.) or expert in Environmental Sciences possessing substantial knowledge to teach a course on environmental studies shall be eligible to teach the course. Principal of the College shall be authorized to determine the eligibility of the teacher on environmental studies
5. This course is to be introduced from the second year B. Pharm with 40 clock hours teaching including field visit.
6. The college on behalf of the University shall conduct the examination of this subject immediately before or after Semester examinations of S.Y./T.Y./Final Year B.Pharm.
7. The student should clear this subject before passing the Final Year B. Pharm examination.
8. A candidate has to pass in this course in order to obtain degree certificate. If the candidate passes in all subjects of degree course but fails in this paper, he will not be eligible to obtain degree certificate.
9. Examination: the College shall organize the evaluation as per pattern suggested below.

The Principal shall submit the result sheet to the Controller of Examination, University of Pune on or before the end of the final year University Examinations of B. Pharm. course. The result shall reflect on the final Mark statement of each student. The results of University examination of the student who fail to get



  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033

Following will be the course structure of First Semester, Second Semester, Third Semester, Fourth Semester, Fifth Semester, Sixth Semester, Seventh Semester, and Eighth Semester.

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

Sr. no.	Subject	Hours per week
1.1.1 T	Pharmaceutics- I	3
1.1.1 P	Pharmaceutics- I	3
1.1.2 T	Modern Dispensing Practices	3
1.1.2 P	Modern Dispensing Practices	3
1.1.3 T	Pharmaceutical Inorganic Chemistry	3
1.1.3 P	Pharmaceutical Inorganic Chemistry	3
1.1.4 T	Pharmaceutical Organic Chemistry-I	3
1.1.4 P	Pharmaceutical Organic Chemistry-I	3
1.1.5 T	Human Anatomy & Physiology-I	3
1.1.5 P	Human Anatomy & Physiology-I	3
1.1.6 T	Communication and soft skill development	3

**Semester-II First Yr. B. Pharmacy**

Sr. no.	Subject	Hours per week
1.2.1 T	Pharmaceutics- II	3
1.2.1 P	Dosage form design	3
1.2.2 P	Dosage form design	3
1.2.3 T	Pharmaceutical Organic Chemistry-II	3
1.2.3 P	Pharmaceutical Organic Chemistry-II	3
1.2.4 T	Human Anatomy & Physiology-II	3
1.2.4 P	Human Anatomy & Physiology-II	3
1.2.5 T	Pharmacognosy	3
1.2.5 P	Pharmacognosy	3
1.2.6 T	Pharmaceutical Analysis I	3
1.2.6 P	Pharmaceutical Analysis I	3





## 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



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





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-VI	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



# UNIVERSITY OF PUNE

## FACULTY OF PHARMACEUTICAL SCIENCES



### MASTER OF PHARMACY (M.PHARM.) in

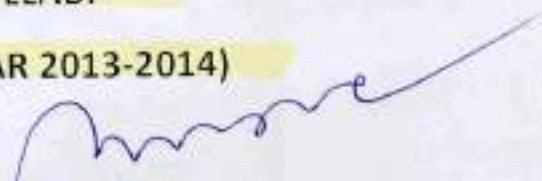
1. Pharmaceutics
2. Pharmaceutical chemistry
3. Pharmacology
4. Pharmacognosy
5. Quality assurance techniques

### COURSE STRUCTURE & SYLLABI

(EFFECTIVE FROM ACADEMIC YEAR 2013-2014)



1

  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Theroan (Kalewadi), Pune-411 033



**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
	Seminar on Dissertation				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												



**MASTER OF PHARMACY COURSE STRUCTURE  
SPECIALIZATION : PHARMACOGNOSY**

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 Pharmacognosy	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 Phytochemistry & Phytopharmaceuticals	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 Industrial Pharmacognosy	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 Pharmacognosy				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
			<b>Total</b>	<b>30</b>	<b>70</b>						<b>Grant Total</b>	<b>1800</b>

Total Credits = 100



  
**PRINCIPAL**  
 Marathwada Mitra Mandal's  
**COLLEGE OF PHARMACY**  
 Thergaon (Kalewadi), Pune-411 033



**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
II	M-I-1 Advanced Quality Assurance Techniques (CGMP & Documentation )	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 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-I-4 Quality Planning and Analysis	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 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					100
		Total		30	70				Grant Total			1800
				Total Credits = 100								



*(Signature)*  
**PRINCIPAL**  
 Marathwada Mitra Mandal's  
 COLLEGE OF PHARMACY  
 Thergaon, Pune-411 033

## B. Research work

Contents	Marks
1. Literature Survey	10
2. Experimental Work	50
3. Scientific Contents	25
4. Result/ Conclusion	25
5. Organization of scientific material, thesis, dissertation and references	20
6. Patent or Publication on thesis work	20
<b>Total</b>	<b>150</b>

## VIII. VIVA-VOCE:

The candidates will have to appear for Viva-Voce on dissertation. This test will be of 100 marks. The student will have to defend the dissertation. The examiners will jointly assign the marks for Viva voce. The allotment of marks for Viva-voce shall be as under:

## C. Dissertation & Defense (viva/voce)

Contents	Marks
i. Depth of knowledge on research work done	50
ii. Result and Discussion	25
iii. Defence	25
<b>Total</b>	<b>100</b>


## IX. EXAMINATION RULES:

Assessment shall consist of A) In – semester continuous assessment and B) end semester assessment. Both shall have an equal weightage of 50% each.

### a. In-semester assessment –

An in-semester assessment of 50 marks should be continuous, procedures and marks for theory and practical examination are as follows –



  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033



### I. For theory Examination –

An In-semester assessment for 50% marks should be continuous and at least five tests should be conducted for full course ( 1 written test for 30 marks and any four test of 5 marks i.e 4 X 5 = 20 marks should be conducted ) and the teacher must select a variety of procedures for examination such as :

- i. Term Paper
- ii. Seminar Presentation
- iii. Short Quizzes
- iv. Assignments
- v. Extension work
- vi. An open book test (with the concern teacher deciding what books are to be allowed for this purpose)
- vii. Mini research project by individual student or group of students
- viii. Case Study

The concern teacher in consultation with the head of PG Department shall decide the nature of question for the written test.

### ii. For practical Examination –

Day to Day Assessment of Journal (Individual Practical's will be evaluated) (Evaluation includes Journal, Day to day Performance, Viva etc.)	20 marks
Sessional Exam (Evaluation of sessional exam includes Experiment, Viva, Synopsis etc.)	30 marks

---

Total 50-marks

If a student misses an internal assessment examination he/she will have a second chance with the permission of the Principal in consultation with concern teacher. Such a second chance shall not be the right of the student.

In case he/she wants to repeat internal assessment he/she can do only by registering for the said courses during the 3<sup>rd</sup> and 4<sup>th</sup> Semester.



**UNIVERSITY OF PUNE**  
**FACULTY OF PHARMACEUTICAL SCIENCES**



**COURSE STRUCTURE & SYLLABI**  
**BACHELOR OF PHARMACY (B. Pharm.) COURSE**  
**(EFFECTIVE FROM ACADEMIC YEAR 2008-09)**



  
**PRINCIPAL**  
**Marathwada Mitra Mandar's**  
**COLLEGE OF PHARMACY**  
Thergaon (Kalewadi), Pune-411 033



## R-I: AIMS & OBJECTIVES OF THE COURSE

### AIMS:

The Pharmacy graduates are required to learn and acquire adequate knowledge, necessary skills to practice the profession of pharmacy. The graduate should have thorough knowledge of synthesis & analysis of medicinal agents, their mode and mechanism of action, drug interactions, patient counseling and adequate technical information to be exchanged with the physician and other health professionals. The graduates are required to acquire in depth knowledge of formulation, quality assurance and storage of various pharmaceutical dosage forms including herbal medicines. The graduates should also understand the concept of community pharmacy and be able to participate in health care programmes of Government and private sector. They are also required to detail the physicians and market the medicinal agents for diagnosis, prevention and therapeutic purposes. The graduate pharmacist should also act as bridge between the Physician and Patients for achieving better health of community.

### OBJECTIVES:

The following objectives of the course should be achieved by acquiring an in-depth knowledge & thorough understanding, necessary skills and developing the right attitude. Therefore they are categorized into following heads,

#### a. Knowledge and Understanding

The graduates should acquire the following during their B. Pharm. Course.

1. Adequate knowledge and scientific information regarding basic principles of Pharmaceutical & Medicinal Chemistry, Pharmaceutics including Cosmeticology, Pharmacology, Pharmacognosy including herbal medicines.
2. Adequate knowledge of practical aspects of
  - a. Synthesis of APIs & its intermediates and analysis of various pharmaceutical dosage forms
  - b. Formulation developments & quality assurance of various pharmaceutical dosage forms including those of herbal origin as per standards of official books, WHO and other regulatory agencies like USFDA, MHRA, UK etc.
  - c. Pharmacological screening and biological standardization and *in-vivo* drug interactions.
  - d. Preparation & analysis of suitable plants material/extracts of medicinal importance for various herbal formulations.
  - e. Clinical studies for patient counseling leading to physical and social well being of the patients.
  - f. Product detailing, marketing, distribution and selling of pharmaceutical products.

#### b. Skills:

A graduate should be able to demonstrate following skills necessary for practice of a Pharmacy

- a. Able to synthesize, purify, identify and analyze medicinal agents.



  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergadi (Kelowadi), Pune-411 033

- b. Able to formulate, store, dispense, analyze the prescriptions and manufacture the pharmaceutical products.
- c. Able to learn and apply the quality assurance principles in regulatory and ethical aspects
- d. Able to extract, purify, identify and understand the therapeutic value of herbal/crude/natural products
- e. Able to screen various medicinal agents using animal models for pharmacological activity.

**c. Attitudes:**

A graduate should develop the following attitudes during the course.

- a. Willing to apply the current knowledge of Pharmacy in the best interest of the patients and the community.
- b. Maintain high standards of professional ethics in discharging professional obligations.
- c. Continuously upgrade professional information and be conversant with latest advances in the field of pharmacy to serve community better.
- d. Willing to participate in continuing education programmes PCI/AICTE/ University of Pune to upgrade the knowledge and professional skills.
- e. To help and participate in the implementation of National Health Programmes.

**R-II: DURATION AND PATTERN**

The Bachelor of Pharmacy (B. Pharm.) degree course shall be of four years duration as annual pattern of examination.

**R-III: ADMISSIONS:**

Admissions to the Course shall be made as per the admission rules made by Govt. of Maharashtra from time to time as per the eligibility criterion mentioned hereunder in R-IV.

**R-IV: ELIGIBILITY CRITERIA**

A. In order to be eligible for admission to First Year B. Pharm. course, a candidate should have

- 1. Passed the HSC (Std. XII) examination of Maharashtra State Board of Secondary and Higher Secondary Education or its equivalent examination with:
  - > English as one of the subjects
  - > Both subjects mentioned under Group -I and
  - > Any one of the subjects mentioned under Group-II

Group-I	1. Physics	2. Chemistry
Group-II	1. Mathematics	2. Biology 3. Biotechnology
	4. Computer Science	

AND

3



  
**PRINCIPAL**  
**Marathwada Mitra Mandal's**  
**COLLEGE OF PHARMACY**  
 (Kolhapur) Pune-411 033



Secured minimum 50% marks (45% for backward class candidates from Maharashtra State only) in Physics, Chemistry and the subject of maximum marks amongst the 4 subjects of Group-II, added together.

OR

2. Passed the Diploma in Pharmacy examination from an institution in Maharashtra or outside Maharashtra affiliated to Maharashtra State Board of Technical Education (MSBTE) or any other examining authority approved by Pharmacy Council of India with minimum 50 % marks in aggregate after (10+2) Science i.e. HSC or its equivalent examination.

B. In order to be eligible for admission to Direct Second Year of B. Pharm. (lateral entry), a candidate should have passed the Diploma in Pharmacy examination from an institution in Maharashtra or outside Maharashtra affiliated to Maharashtra State Board of Technical Education (MSBTE) or any other examining authority approved by Pharmacy Council of India with minimum 60 % marks in aggregate after (10+2) Science i.e. HSC or its equivalent examination.

**NOTE:** In case of eligibility criterion decided by the Govt. of Maharashtra differs from above, university authorities shall decide the eligibility criterion from time to time.

#### R-V: MEDIUM OF INSTRUCTION AND EXAMINATION

The medium of instruction and examination shall be English.

#### R-VI: STRUCTURE OF B. PHARM. COURSE

The following will be the course structure of First Year, Second Year, Third Year and Final Year B. Pharm.

#### FIRST YEAR B. PHARM.

Sr. No.	Subject	Theory Hours Per Week	Practical Hours Per Week
1.1	Pharmaceutics-I	3	3
1.2	Modern Dispensing Practices	2	3
1.3	Pharmaceutical Inorganic Chemistry	3	3
1.4	Pharmaceutical Organic Chemistry – I	3	3
1.5	Anatomy Physiology & Health Education	3	3
1.6	Pharmaceutical Engineering	2	-
1.7	Computer Applications & Bio-statistics	2	1 Hr. Demo
	<b>TOTAL</b>	<b>18</b>	<b>16</b>



  
**PRINCIPAL**  
Maharashtra Mitra Mandar's  
COLLEGE OF PHARMACY  
Thergaon (Kalawadi), Pune-411 033

**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	
	<b>TOTAL</b>	<b>20</b>	<b>15</b>

**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		
	<b>TOTAL</b>	<b>19</b>	<b>15</b>

**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	--
	<b>TOTAL</b>	<b>19</b>	<b>15</b>

**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.





The following shall be the mode of Award of Class at an examination.

1. Candidates obtaining 70% or more of Grand Total: First Class with Distinction.
2. Candidates obtaining 60% or more but less than 70 % of Grand Total: First Class.
3. Candidates obtaining 50 % or more but less than 60% of Grand Total: Second Class.

The names of first five merit candidates from the list of successful candidates will be shown in the notification of result of the examination published by the University. Every candidate shall be required to undergo at least one months Practical training (continuous or in parts) at any time after the end of the Second Year B Pharm Examination, in a Recognized Pharmaceutical Manufacturing Concern or in an Analytical Laboratory or in a Chemical Manufacturing Unit or Pharmaceutical Research Organization or Hospital (Clinical Pharmacy), failing which, he/she will not be eligible for conferment of degree by the University.

#### **R-XVI: ENVIRONMENTAL SCIENCES**

An additional course in environmental sciences shall be conducted as per following guidelines.

1. A course in Environmental Awareness with duration of six months (30 lectures of one hour duration & field work of 10 hours duration.) shall be introduced at the second year of degree course B.Pharm as a compulsory course.
2. An additional course fee of Rs. 500 per student shall be charged to meet the expenditure on the conduct of the course.
3. A course Coordinator shall be appointed to organize teaching and evaluation by the Principal.
4. Qualifications of a Teacher.  
University approved teacher (minimum lecturer) in any subject possessing substantial knowledge to teach a course on environmental studies shall be eligible to teach the course. Principal of the College shall be authorized to determine the eligibility of the teacher on environmental studies
5. This course is to be introduced from the second year B.Pharm with 40 clock hours teaching including field visit.
6. The college on behalf of the University shall conduct the examination of this subject immediately before or after annual examinations of S.Y./T.Y./Final Year B.Pharm.
7. The student should clear this subject before passing the Final Year B.Pharm examination.
8. A candidate has to pass in this course in order to obtain degree certificate. If the candidate passes in all subjects of degree course but fails in this paper, he will not be eligible to obtain degree certificate.
9. Examination: the College shall organize the evaluation as per pattern suggested below.

The Principal shall submit the result sheet to the Controller of Examination, University of Pune on or before the end of the final year University Examinations of B. Pharm. course. The result shall reflect on the final Mark statement of each student. The results of University examination of the student who fail to get Minimum 'C' Grade in this course shall be kept in reserve till the concerned student complete the course and secure to required Minimum C Grade.



  
PRINCIPAL  
Marathwada Mitra Mandal's  
COLLEGE OF PHARMACY  
Thergaon (Kalewadi), Pune-411 033



The question paper shall include the questions as under

A. Multiple choice questions	:50 Marks
B. Essay type questions	:25 Marks
C. Field works	:25 Marks

Total: 100 Marks

Passing Marks: 40 Marks.

Following Grades shall be awarded to the candidates based on their marks obtained.

**Grade-O:** above 75    **Grade-A:** 61 to 75    **Grade-B:** 51 to 60    **Grade-C:** 40 to 50

### **R-XVII: PROJECT WORK**

The project work shall be introduced at third year B.Pharm as per the following guidelines.

#### **1. Objectives:**

The objectives of the project work are to

1. Develop research aptitude.
2. Sharpen communication & presentation skills.
3. Provide exposure to literature survey as well as research methodology.
4. Develop and improve logical, creative, Interpretational and analytical abilities

#### **2. Duration of the work & Dates of submission**

Project shall be completed in one academic year (i.e. on Holidays, Sunday, Diwali Vacation etc. i.e. 10 months from June to March/April

- a. The topic and selection of guide shall be done in months of June-July.
- b. The Synopsis shall be submitted on and before 15<sup>th</sup> October.
- c. Final project / dissertation submission on and before 31 March
- d. Final presentation and viva-voce on and before 30 April.

#### **3. Selection of the Project Topic**

Topic should be Lab oriented, Study oriented or survey oriented or Computer oriented. These may be from field relevant to pharmacy like Pharmaceutics, Pharmaceutical Chemistry, Medicinal Chemistry, Pharmacognosy, Bio-pharmaceutics, Pharmacokinetics, Pharmaceutical Analysis, Formulation Development, Chemical Process Development, Drug Design, Clinical and Hospital Pharmacy, Community Pharmacy, Biotechnology, Bioinformatics, Cheminformatics, Ayurveda, Cosmeticology, Regulatory Affairs, Intellectual Property Rights, Patents, Forensic and Jurisprudence, Mining of information from literature as well as electronic database, Reviews, Pharmaceutical sales & marketing, Pharma Packaging, etc.

