

---

**UNIVERSITY OF MUMBAI**



**Manual on**  
**CHOICE BASED CREDIT SYSTEM**  
for  
**Postgraduate Program**  
**(Master of Pharmacy, M. Pharm.)**  
in  
**PHARMACY**  
Revised Course (Revised 2019)  
(from the academic year 2019–2020)

1

## INTRODUCTION

### RECOMMENDATIONS OF NATIONAL REGULATORY AUTHORITIES

The **University Grants Commission (UGC)**, the **National Assessment and Accreditation Council (NAAC)**, the **Distance Education Council (DEC)** and the **National Knowledge Commission (NKC)** have time and again come out with recommendations for improving the quality and effectiveness of Higher education provisions in the country. The ministry of Human Resource Development at the Central level and the Ministry of Higher & Technical Education, Govt. of Maharashtra have also repeatedly stressed on the need for universities to pay prompt attention to improve the quality of education. The **National Knowledge Commission (NKC)**, in its report to the Prime Minister on 29th November 2006) has also reiterated the importance of higher education and the contribution it has made to economic development, social progress and political democracy in independent India.

An important concern voiced more strongly in recent times, is the need to develop a Choice-Based Credit System (CBCS) in tune with global trends and the adoption of a sound grading system for reflecting learner performance. This is in line with the **recommendation of the UGC** in its *Action Plan for Academic and Administrative Reforms* (Ref. UGC letters January 2008; March 2009) “..... *Curricular flexibility and learners’ mobility are issues that warrant our urgent attention. These can be addressed by introducing credit based courses and credit accumulation. In order to provide with some degree of flexibility to learners, we need to provide flexibility in course selection and also a minimum as well as a maximum permissible span of time in which a course can be completed by a learner... The Choice-Based Credit System (CBCS) imminently fits into the emerging socioeconomic milieu, and could effectively respond to the educational and occupational aspirations of the upcoming generations. In view of this, institutions of higher education in India would do well to invest thought and resources into introducing CBCS. Aided by modern communication and information technology, CBCS has a high probability to be operationalized efficiently and effectively — elevating learners, institutions and higher education system in the country to newer heights... ”.*

### RATIONALE FOR INTRODUCTION OF CREDIT AND GRADING SYSTEM

The UGC while outlining the several unique features of the Choice-Based Credit System (CBCS) has, in fact, given in a nutshell, the rationale for its introduction. Among the features

highlighted by the UGC are: *Enhanced learning opportunities, ability to match learners' scholastic needs and aspirations, inter-institution transferability of learners (following the completion of a semester), part-completion of an academic programme in the institution of enrolment and part-completion in a specialized (and recognized) institution, improvement in educational quality and excellence, flexibility for working learners to complete the programme over an extended period of time, standardization and comparability of educational programmes across the country, etc.*

This Choice Based Credit System enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning, not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. It can be concluded from the above discussion that it is very much essential to implement the Choice Based Credit System in higher education in India. Course credit structure, examination/assessment and grading are mainly focused aspects of this manual and discussed in subsequent chapters.

#### **DIRECTIVES OF PHARMACY COUNCIL OF INDIA**

The Pharmacy Council of India (PCI) in exercise of the powers conferred to it under the sections 10 and 18 of the Pharmacy Act 1948 (8 of 1948), with the approval of the Central Government, had made the Bachelor of Pharmacy (B. Pharm.) Course Regulations, 2014 and Master of Pharmacy (M. Pharm.) Course regulations vide Gazette dated December 10, 2014. Further as per regulations 6 and 8 of the above course regulations the PCI has also prescribed the Rules and Syllabus for B. Pharm. course and Scheme and Syllabus for M. Pharm., its letter Ref 14-136/2016-PCI and Ref 14-154/2015 PCI dated December 21, 2016, with the subject heading "Statutory Scheme/Rules and syllabus for B. Pharm and M. Pharm. courses". It is thus mandatory to implement the directives of PCI with regard to the Rules/Regulations/Syllabus for recognition and extension of approval of B. Pharm. and M. Pharm. programs of institutes/Universities by the PCI

## **1. ADMISSION CRITERIA**

Admission to the M. Pharm. program of University of Mumbai is governed by the rules and regulations of University of Mumbai and as per norms of the Govt. of Maharashtra through State CET Cell and the Directorate of Technical Education (DTE) and the All India Council for Technical Education (AICTE, New Delhi) in force at the time of admission and as amended from time to time.

In general, a learner who has passed the examination for the B. Pharm. Degree from All India Council for Technical Education or Pharmacy Council of India or Central or State Government approved institutions, with at least **55 %** marks (at least **50%** marks in case of SC or ST category and persons with disability belonging to Maharashtra state only.) and obtained Score in Graduate pharmacy Aptitude Test conducted by All India Council of Technical Education may be admitted to the M. Pharm. Program (Partly by Papers and Partly by Research). However, the rules/regulations and qualifications for admission be those in effect at the day and time of admission.

## **2. COURSE STRUCTURE**

### **2.1 Duration of the program**

The program of study for M. Pharm. shall extend over a period of four semesters (two academic years). The medium of instruction shall be English.

### **2.2 Working days in each semester**

Each semester shall consist of not less than 100 working days. The odd semesters shall be conducted from the month of July to November/December and the even semesters shall be conducted from the month of December/January to May/June in every calendar year.

As the requirements for a particular degree (undergraduate or postgraduate), a certain quantum of academic work measured in terms of credits is laid down in general. Learner earns credits every semester by satisfactorily clearing courses/other academic activities. 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 activities is dependent upon the quantum of work expected to be put in for each of the other activity per week.

### **2.3 Attendance and progress**

A candidate is required to put in at least **75 %** 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.

### **2.4 Credit assignment**

#### ***2.4.1 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.

### **2.5 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 13. 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.

### 3. 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.

### 4. 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 (Quality Assurance)	MQA
6.	Pharmaceutical Regulatory Affairs	MRA
7.	Pharmaceutical Biotechnology	MPB
8.	Pharmacy Practice	MPP
9.	Pharmacology	MPL
10.	Pharmacognosy (Pharmacognosy and Phytochemistry)	MPG

The course of study for M. Pharm. specializations shall include Semester wise Theory & Practical as given in Tables – 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)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./week</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MPH101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MPH102T</b>	Drug Delivery System	4	4	4	100
<b>MPH103T</b>	Modern Pharmaceutics	4	4	4	100
<b>MPH104T</b>	Regulatory Affair	4	4	4	100
<b>MPH105P</b>	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>					
<b>MPH201T</b>	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	4	4	4	100
<b>MPH202T</b>	Advanced Biopharmaceutics & Pharmacokinetics	4	4	4	100
<b>MPH203T</b>	Computer Aided Drug Delivery System	4	4	4	100
<b>MPH204T</b>	Cosmetic and Cosmeceuticals	4	4	4	100
<b>MPH205P</b>	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 – 3: Course of study for M. Pharm. (Industrial Pharmacy)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./week</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MIP101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MIP102T</b>	Pharmaceutical Formulation Development	4	4	4	100
<b>MIP103T</b>	Novel drug delivery systems	4	4	4	100
<b>MIP104T</b>	Intellectual Property Rights	4	4	4	100
<b>MIP105P</b>	Industrial Pharmacy Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
<b>Total</b>		35	26	35	650
<b>Semester II</b>					
<b>MIP201T</b>	Advanced Biopharmaceutics and Pharmacokinetics	4	4	4	100
<b>MIP202T</b>	Scale up and Technology Transfer	4	4	4	100
<b>MIP203T</b>	Pharmaceutical Production Technology	4	4	4	100
<b>MIP204T</b>	Entrepreneurship Management	4	4	4	100
<b>MIP205P</b>	Industrial Pharmacy Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
<b>Total</b>		35	26	35	650

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

Course Code	Course	Credit Hours	Credit Points	Hrs./w k	Marks
<b>Semester I</b>					
<b>MPC101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MPC1012T</b>	Advanced Organic Chemistry -I	4	4	4	100
<b>MPC103T</b>	Advanced Medicinal chemistry	4	4	4	100
<b>MPC104T</b>	Chemistry of Natural Products	4	4	4	100
<b>MPC105P</b>	Pharmaceutical Chemistry 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>					
<b>MPC201T</b>	Advanced Spectral Analysis	4	4	4	100
<b>MPC202T</b>	Advanced Organic Chemistry -II	4	4	4	100
<b>MPC203T</b>	Computer Aided Drug Design	4	4	4	100
<b>MPC204T</b>	Pharmaceutical Process Chemistry	4	4	4	100
<b>MPC205P</b>	Pharmaceutical Chemistry 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 – 5: Course of study for M. Pharm. (Pharmaceutical Analysis)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./week</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MPA101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MPA102T</b>	Advanced Pharmaceutical Analysis	4	4	4	100
<b>MPA103T</b>	Pharmaceutical Validation	4	4	4	100
<b>MPA104T</b>	Food Analysis	4	4	4	100
<b>MPA105P</b>	Pharmaceutical Analysis 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>					
<b>MPA201T</b>	Advanced Instrumental Analysis	4	4	4	100
<b>MPA202T</b>	Modern Bio-Analytical Techniques	4	4	4	100
<b>MPA203T</b>	Quality Control and Quality Assurance	4	4	4	100
<b>MPA204T</b>	Herbal and Cosmetic Analysis	4	4	4	100
<b>MPA205P</b>	Pharmaceutical Analysis 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 or Quality Assurance)**

Course Code	Course	Credit Hours	Credit Points	Hrs./week	Marks
<b>Semester I</b>					
<b>MQA101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MQA102T</b>	Quality Management System	4	4	4	100
<b>MQA103T</b>	Quality Control and Quality Assurance	4	4	4	100
<b>MQA104T</b>	Product Development and Technology Transfer	4	4	4	100
<b>MQA105P</b>	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>					
<b>MQA201T</b>	Hazards and Safety Management	4	4	4	100
<b>MQA202T</b>	Pharmaceutical Validation	4	4	4	100
<b>MQA203T</b>	Audits and Regulatory Compliance	4	4	4	100
<b>MQA204T</b>	Pharmaceutical Manufacturing Technology	4	4	4	100
<b>MQA205P</b>	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 – 7: Course of study for M. Pharm. (Regulatory Affairs)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./wk</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MRA101T</b>	Good Regulatory Practices	4	4	4	100
<b>MRA102T</b>	Documentation and Regulatory Writing	4	4	4	100
<b>MRA103T</b>	Clinical Research Regulations	4	4	4	100
<b>MRA104T</b>	Regulations and Legislation for Drugs & Cosmetics, Medical Devices, Biologicals & Herbals, and Food & Nutraceuticals in India and Intellectual Property Rights	4	4	4	100
<b>MRA105P</b>	Regulatory Affairs 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>					
<b>MRA201T</b>	Regulatory Aspects of Drugs & Cosmetics	4	4	4	100
<b>MRA202T</b>	Regulatory Aspects of Herbal & Biologicals	4	4	4	100
<b>MRA203T</b>	Regulatory Aspects of Medical Devices	4	4	4	100
<b>MRA204T</b>	Regulatory Aspects of Food & Nutraceuticals	4	4	4	100
<b>MRA205P</b>	Regulatory Affairs 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 – 8: Course of study for M. Pharm. (Pharmaceutical Biotechnology)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./week</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MPB101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MPB102T</b>	Microbial And Cellular Biology	4	4	4	100
<b>MPB103T</b>	Bioprocess Engineering and Technology	4	4	4	100
<b>MPB104T</b>	Advanced Pharmaceutical Biotechnology	4	4	4	100
<b>MPB105P</b>	Pharmaceutical Biotechnology 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>					
<b>MPB201T</b>	Proteins and protein Formulation	4	4	4	100
<b>MPB202T</b>	Immunotechnology	4	4	4	100
<b>MPB203T</b>	Bioinformatics and Computer Technology	4	4	4	100
<b>MPB204T</b>	Biological Evaluation of Drug Therapy	4	4	4	100
<b>MPB205P</b>	Pharmaceutical Biotechnology 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 – 9: Course of study for M. Pharm. (Pharmacy Practice)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./wk</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MPP101T</b>	Clinical Pharmacy Practice	4	4	4	100
<b>MPP102T</b>	Pharmacotherapeutics-I	4	4	4	100
<b>MPP103T</b>	Hospital & Community Pharmacy	4	4	4	100
<b>MPP104T</b>	Clinical Research	4	4	4	100
<b>MPP105P</b>	Pharmacy Practice 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>					
<b>MPP201T</b>	Principles of Quality Use of Medicines	4	4	4	100
<b>MPP102T</b>	Pharmacotherapeutics II	4	4	4	100
<b>MPP203T</b>	Clinical Pharmacokinetics and Therapeutic Drug Monitoring	4	4	4	100
<b>MPP204T</b>	Pharmacoepidemiology & Pharmacoeconomics	4	4	4	100
<b>MPP205P</b>	Pharmacy Practice 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 – 10: Course of study for (Pharmacology)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./wk</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MPL101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MPL102T</b>	Advanced Pharmacology-I	4	4	4	100
<b>MPL103T</b>	Pharmacological and Toxicological Screening Methods-I	4	4	4	100
<b>MPL104T</b>	Cellular and Molecular Pharmacology	4	4	4	100
<b>MPL105P</b>	Pharmacology 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>					
<b>MPL201T</b>	Advanced Pharmacology II	4	4	4	100
<b>MPL102T</b>	Pharmacological and Toxicological Screening Methods-II	4	4	4	100
<b>MPL203T</b>	Principles of Drug Discovery	4	4	4	100
<b>MPL204T</b>	Experimental Pharmacology practical- II	4	4	4	100
<b>MPL205P</b>	Pharmacology 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 or  
Pharmacognosy and Phytochemistry)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>	<b>Hrs./wk</b>	<b>Marks</b>
<b>Semester I</b>					
<b>MPG101T</b>	Modern Pharmaceutical Analytical Techniques	4	4	4	100
<b>MPG102T</b>	Advanced Pharmacognosy-1	4	4	4	100
<b>MPG103T</b>	Phytochemistry	4	4	4	100
<b>MPG104T</b>	Industrial Pharmacognostical Technology	4	4	4	100
<b>MPG105P</b>	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>					
<b>MPG201T</b>	Medicinal Plant biotechnology	4	4	4	100
<b>MPG102T</b>	Advanced Pharmacognosy-II	4	4	4	100
<b>MPG203T</b>	Indian system of medicine	4	4	4	100
<b>MPG204T</b>	Herbal cosmetics	4	4	4	100
<b>MPG205P</b>	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 and IV Semesters  
(Common for All Specializations)**

<b>Course Code</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Credit Points</b>
<b>MRM301T</b>	Research Methodology and Biostatistics*	4	4
-	Journal club	2	2
-	Discussion / Presentation (Proposal Presentation)	5	5
-	Research Work	30	30
<b>Total</b>		<b>41</b>	<b>41</b>

\* Non University Exam

**Table – 13: Semester wise credits distribution**

<b>Semester</b>	<b>Credit Points</b>
<b>I</b>	26
<b>II</b>	26
<b>III and IV</b>	41
<b>Co-curricular Activities (Attending Conference, Scientific Presentations and Other Scholarly Activities)</b>	Minimum=02 Maximum=07*
<b>Total Credit Points</b>	Minimum=95 Maximum=100*

\*Credit Points for Co-curricular Activities

**Table – 14: Guidelines for Awarding Credit Points for Co-curricular Activities**

<b>Name of the Activity</b>	<b>Maximum Credit Points Eligible / Activity</b>
<b>Participation in National Level Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)</b>	01
<b>Participation in international Level Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)</b>	02
<b>Academic Award/Research Award from State Level/National Agencies</b>	01
<b>Academic Award/Research Award from International Agencies</b>	02
<b>Research / Review Publication in National Journals (Indexed in Scopus / Web of Science)</b>	01
<b>Research / Review Publication in International Journals (Indexed in Scopus /Web of Science)</b>	02

**Note:** International Conference: Held Outside India International Journal: The Editorial

Board Outside India

\*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.

### **5. Program Committee**

1. The M. Pharm. programme shall have a Programme Committee constituted by the Head of the institution in consultation with all the Heads of the departments.
2. The composition of the Programme Committee shall be as follows:  
A teacher at the cadre of Professor shall be the Chairperson; One Teacher from each M. Pharm specialization and four student representatives (two from each academic year), nominated by the Head of the institution.
3. Duties of the Programme Committee:
  - i. Periodically reviewing the progress of the classes.
  - ii. Discussing the problems concerning curriculum, syllabus and the conduct of classes.
  - iii. Discussing with the course teachers on the nature and scope of assessment for the course and the same shall be announced to the students at the beginning of respective semesters.
  - iv. Communicating its recommendation to the Head of the institution on academic matters.
  - v. The Programme Committee shall meet at least twice in a semester preferably at the end of each sessional exam and before the end semester exam.

### **6. Examinations/Assessments**

The schemes for internal assessment and end semester examinations are given in Tables – 15 to 25.

**Tables – 15: Schemes for internal assessments and end semester examinations  
(Pharmaceutics- MPH)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
<b>MPH101T</b>	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH102T</b>	Drug Delivery System	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH103T</b>	Modern Pharmaceutics	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH104T</b>	Regulatory Affair	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH105P</b>	Pharmaceutics Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MPH201T</b>	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH202T</b>	Advanced Biopharmaceutics & Pharmacokinetics	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH203T</b>	Computer Aided Drug Delivery System	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH 204T</b>	Cosmetic and Cosmeceuticals	10	15	1 Hr	25	75	3 Hrs	100
<b>MPH205P</b>	Pharmaceutics Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>TOTAL</b>								<b>650</b>

**Tables – 16: Schemes for internal assessments and end semester examinations (Industrial Pharmacy-MIP)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Con ti nu o u s M o d e	Sessional Exams		To t a l	Ma r k s	Dura tion	
			Mar k s	Dura ti o n				
<b>SEMESTER I</b>								
<b>MIP101T</b>	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP102T</b>	Pharmaceutical Formulation Development	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP103T</b>	Novel drug delivery systems	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP104T</b>	Intellectual Property Rights	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP105P</b>	Industrial Pharmacy Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MIP201T</b>	Advanced Biopharmaceutics and Pharmacokinetics	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP202T</b>	Scale up and Technology Transfer	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP203T</b>	Pharmaceutical Production Technology	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP204T</b>	Entrepreneurship Management	10	15	1 Hr	25	75	3 Hrs	100
<b>MIP205P</b>	Industrial Pharmacy Practical II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 17: Schemes for internal assessments and end semester examinations (Pharmaceutical Chemistry-MPC)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
<b>MPC101T</b>	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC102T</b>	Advanced Organic Chemistry -I	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC103T</b>	Advanced Medicinal chemistry	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC104T</b>	Chemistry of Natural Products	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC105P</b>	Pharmaceutical Chemistry Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MPC201T</b>	Advanced Spectral Analysis	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC202T</b>	Advanced Organic Chemistry -II	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC203T</b>	Computer Aided Drug Design	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC204T</b>	Pharmaceutical Process Chemistry	10	15	1 Hr	25	75	3 Hrs	100
<b>MPC205P</b>	Pharmaceutical Chemistry Practical II	20	30	6 Hrs	50	100	6Hrs	150
--	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 18: Schemes for internal assessments and end semester examinations (Pharmaceutical Analysis-MPA)**

Course Code	Course	Internal Assessment			End Semester Exams			Total Marks
		Continuo us Mode	Sessional Exams		To t al	Mar k s	Dur a tion	
			Mar k s	Dura ti on				
<b>SEMESTER I</b>								
MPA101T	Modern Pharmaceutical Analysis	10	15	1 Hr	25	75	3 Hrs	100
MPA102T	Advanced Pharmaceutical Analysis	10	15	1 Hr	25	75	3 Hrs	100
MPA103T	Pharmaceutical Validation	10	15	1 Hr	25	75	3 Hrs	100
MPA104T	Food Analysis	10	15	1 Hr	25	75	3 Hrs	100
MPA105P	Pharmaceutical Analysis- I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
MPA201T	Advanced Instrumental Analysis	10	15	1 Hr	25	75	3 Hrs	100
MPA202T	Modern Bio-Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
MPA203T	Quality Control and Quality Assurance	10	15	1 Hr	25	75	3 Hrs	100
MPA204T	Herbal and Cosmetic analysis	10	15	1 Hr	25	75	3 Hrs	100
MPA205P	Pharmaceutical Analysis-II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 19: Schemes for internal assessments and end semester examinations (Pharmaceutical Quality Assurance or Quality Assurance -MQA)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
<b>MQA1 01T</b>	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA102T</b>	Quality Management System	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA103T</b>	Quality Control and Quality Assurance	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA1 04T</b>	Product Development and Technology Transfer	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA1 05P</b>	Pharmaceutical Quality Assurance Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MQA201T</b>	Hazards and Safety Management	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA202T</b>	Pharmaceutical Validation	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA2 03T</b>	Audits and Regulatory Compliance	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA2 04T</b>	Pharmaceutical Manufacturing Technology	10	15	1 Hr	25	75	3 Hrs	100
<b>MQA2 05P</b>	Pharmaceutical Quality Assurance Practical II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 20: Schemes for internal assessments and end semester examinations (Pharmaceutical Regulatory Affairs-MRA)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuos Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
<b>MRA10 1T</b>	Good Pharmaceutical Practices	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA10 2T</b>	Documentation and Regulatory Writing	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA10 3T</b>	Clinical Research Regulations	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA10 4T</b>	Regulations and Legislation for Drugs &Cosmetics, Medical Devices, Biologicals &Herbals, and Food & Nutraceuticals In India and IntellectualProperty Rights	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA10 5T</b>	Pharmaceutical Regulatory Affairs Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar/Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MRA20 1T</b>	Regulatory Aspects of Drugs &Cosmetics	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA20 2T</b>	Regulatory Aspects of Herbal &Biologicals	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA20 3T</b>	Regulatory Aspects of Medical Devices	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA20 4T</b>	Regulatory Aspects of Food & Nutraceuticals	10	15	1 Hr	25	75	3 Hrs	100
<b>MRA20 5P</b>	Pharmaceutical Regulatory Affairs Practical II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 21: Schemes for internal assessments and end semester examinations (Pharmaceutical Biotechnology-MPB)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
MPB10 1T	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
MPB10 2T	Microbial And Cellular Biology	10	15	1 Hr	25	75	3 Hrs	100
MPB103T	Bioprocess Engineering and Technology	10	15	1 Hr	25	75	3 Hrs	100
MPB104T	Advanced Pharmaceutical Biotechnology	10	15	1 Hr	25	75	3 Hrs	100
MPB105P	Pharmaceutical Biotechnology Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
MPB201T	Proteins and protein Formulation	10	15	1 Hr	25	75	3 Hrs	100
MPB202T	Immunotechnology	10	15	1 Hr	25	75	3 Hrs	100
MPB203T	Bioinformatics and Computer Technology	10	15	1 Hr	25	75	3 Hrs	100
MPB204T	Biological Evaluation of Drug Therapy	10	15	1 Hr	25	75	3 Hrs	100
MPB205P	Pharmaceutical Biotechnology Practical II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 22: Schemes for internal assessments and end semester examinations (Pharmacy Practice-MPP)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
MPP101T	Clinical Pharmacy Practice	10	15	1 Hr	25	75	3 Hrs	100
MPP102T	Pharmacotherapeutics-I	10	15	1 Hr	25	75	3 Hrs	100
MPP103T	Hospital & Community Pharmacy	10	15	1 Hr	25	75	3 Hrs	100
MPP104T	Clinical Research	10	15	1 Hr	25	75	3 Hrs	100
MPP105P	Pharmacy Practice Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
MPP201T	Principles of Quality Use of Medicines	10	15	1 Hr	25	75	3 Hrs	100
MPP102T	Pharmacotherapeutics II	10	15	1 Hr	25	75	3 Hrs	100
MPP203T	Clinical Pharmacokinetics and Therapeutic Drug Monitoring	10	15	1 Hr	25	75	3 Hrs	100
MPP204T	Pharmacoepidemiology & Pharmacoeconomics	10	15	1 Hr	25	75	3 Hrs	100
MPP205P	Pharmacy Practice Practical II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 23: Schemes for internal assessments and end semester examinations (Pharmacology-MPL)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
<b>MPL10 1T</b>	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL10 2T</b>	Advanced Pharmacology-I	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL10 3T</b>	Pharmacological and Toxicological Screening Methods-I	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL10 4T</b>	Cellular and Molecular Pharmacology	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL10 5P</b>	Experimental Pharmacology - I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MPL20 1T</b>	Advanced Pharmacology II	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL10 2T</b>	Pharmacological and Toxicological Screening Methods-II	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL20 3T</b>	Principles of Drug Discovery	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL20 4T</b>	Clinical research and pharmacovigilance	10	15	1 Hr	25	75	3 Hrs	100
<b>MPL20 5P</b>	Experimental Pharmacology - II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 24: Schemes for internal assessments and end semester examinations (Pharmacognosy and Phytochemistry-MPG)**

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
<b>SEMESTER I</b>								
<b>MPG10 1T</b>	Modern Pharmaceutical Analytical Techniques	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG10 2T</b>	Advanced Pharmacognosy-1	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG10 3T</b>	Phytochemistry	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG10 4T</b>	Industrial Pharmacognostical Technology	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG10 5P</b>	Pharmacognosy Practical I	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>
<b>SEMESTER II</b>								
<b>MPG20 1T</b>	Medicinal Plant biotechnology	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG10 2T</b>	Advanced Pharmacognosy-II	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG20 3T</b>	Indian system of medicine	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG20 4T</b>	Herbal cosmetics	10	15	1 Hr	25	75	3 Hrs	100
<b>MPG20 5P</b>	Pharmacognosy Practical II	20	30	6 Hrs	50	100	6 Hrs	150
-	Seminar /Assignment	-	-	-	-	-	-	100
<b>Total</b>								<b>650</b>

**Tables – 25: 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>								
<b>MRM 30 1T</b>	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 and colloquium	-	-	-	-	-	-	-
<b>Total</b>								<b>175</b>
<b>SEMESTER IV</b>								
-	Journal club	-	-	-	25	-	-	25
-	Discussion / Presentation (Proposal Presentation)	-	-	-	75	-	-	75
-	Research work and Colloquium	-	-	-	-	750	1 Hr	850
<b>Total</b>								<b>1025</b>

\*Non-University Examination

### 6.1 Internal assessment: Continuous mode

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

**Table – 26: Scheme for awarding internal assessment: Continuous mode**

Theory	
Criteria	Maximum Marks
Attendance (Refer Table – 27)	8
Student – Teacher interaction	2
<b>Total</b>	<b>10</b>
Practical	
Attendance (Refer Table – 27)	10
Based on Practical Records, Regular viva voce, etc.	10
<b>Total</b>	<b>20</b>

**Table – 27: Guidelines for the allotment of marks for attendance**

Percentage of Attendance	Theory	Practical
90 – 100	8	10
85 – 89	6	7.5
80 – 84	4	5
75– 79	2	2.5
Less than 75	0	0

### 6.2 Sessional Exams

Two sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the college(s). The average marks of two sessional exams shall be computed for internal assessment as per the requirements given in the tables above.

### 6.3 End Semester Exam:

The End Semester Examinations in Semesters I and II (Theory Courses) of the M. Pharm. degree, and the *viva-voce* examination of the thesis at the end of Semester IV for the M. Pharm. Degree course will be conducted by the university.

A time-table and question papers for all the theory examinations of Semesters I and II will be prepared/set by the university as per the procedure.

The question papers for the Theory courses in Semesters I and II will be set by examiners and paper-setters appointed by the University.

The assessment and moderation of the answer booklets for the examinations in Theory courses in Semesters I and II will be carried out by examiners and moderators appointed by the ad-hoc Board of Studies in Pharmacy and approved by the University.

The assessment and moderation of the answer booklets of the Theory courses in Semesters I and II will be conducted by the University through Central Assessment Programme (CAP).

The evaluation of the End Semester Examination in the Practical subjects and Seminar/assignment in Semester I and II will be conducted at the college/institutional level by PG teachers recognized as research guides by the university

### **7. Promotion and award of grades**

A student shall be declared PASS and eligible for getting grade in a course of M. Pharm. programme if he/she secures at least 50% marks in that particular course including internal assessment.

### **8. Carry forward of marks**

In case a student fails to secure the minimum **50%** in any Theory or Practical course, then he/she shall reappear for the end semester examination of that course. However, his/her marks of the Internal Assessment shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

### **9. Improvement of internal assessment**

A student shall have the opportunity to improve his/her performance only once in the Sessional exam component of the internal assessment. The re-conduct of the Sessional exam shall be completed before the commencement of next end semester theory examinations.

### **10. Reexamination of end semester examinations**

Reexamination of end semester examination shall be conducted as per the schedule given in table 28. The exact dates of examinations shall be notified from time to time.

**Table – 28: Tentative schedule of end semester examinations**

<b>Semester</b>	<b>For Regular Candidates</b>	<b>For Failed Candidates</b>
<b>I and III</b>	November / December	May / June
<b>II and IV</b>	May / June	November / December

### **11. Allowed to keep terms(ATKT):**

No student shall be admitted to any examination unless he/she fulfills the norms of attendance. ATKT rules are applicable as follows:

A student shall be eligible to carry forward all the courses of I, II and III. The submission of synopsis and the holding of the viva voce examination shall be permitted only if the student has successfully cleared semester I, II and III.

A student shall be eligible to get his/her CGPA upon successful completion of the courses of I to IV semesters within the stipulated time period as per the norms.

Note: Grade AB should be considered as failed and treated as one head for deciding ATKT. Such rules are also applicable for those students who fail to register for examination(s) of any course in any semester.

## 12. Grading of performances

### a. Letter grades and grade points allocations:

Based on the performances, each student shall be awarded a final letter grade at the end of the semester for each course. The letter grades and their corresponding grade points are given in Table – 29.

**Table – 29: Letter grades and grade points equivalent to Percentage of marks and performances**

Percentage of Marks Obtained	Letter Grade	Grade Point	Performance
90.00 – 100	O	10	Outstanding
80.00 – 89.99	A	9	Excellent
70.00 – 79.99	B	8	Good
60.00 – 69.99	C	7	Fair
50.00 – 59.99	D	6	Average
Less than 50	F	0	Fail
Absent	AB	0	Fail

A learner who remains absent for any end semester examination shall be assigned a letter grade of AB and a corresponding grade point of zero. He/she should reappear for the said evaluation/examination in due course.

## 13. The Semester grade point average (SGPA)

The performance of a student in a semester is indicated by a number called ‘Semester Grade Point Average’ (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the student during the semester. For example, if a student takes five courses (Theory/Practical) in a semester with credits

C1, C2, C3 and C4 and the student's grade points in these courses are G1, G2, G3 and G4, respectively, and then students' SGPA is equal to:

$$\text{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4G_4}{C_1 + C_2 + C_3 + C_4}$$

The SGPA is calculated to two decimal points. It should be noted that, the SGPA for any semester shall take into consideration the F and ABS grade awarded in that semester. For example, if a learner has a F or ABS grade in course 4, the SGPA shall then be computed as:

$$\text{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4 * 0}{C_1 + C_2 + C_3 + C_4}$$

#### 14. Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the IV semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all IV semesters and their courses. The CGPA shall reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the course(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA shall only reflect the new grade and not the fail grades earned earlier. The CGPA is calculated as:

$$\text{CGPA} = \frac{C_1S_1 + C_2S_2 + C_3S_3 + C_4S_4}{C_1 + C_2 + C_3 + C_4}$$

where C1, C2, C3,.... is the total number of credits for semester I,II,III,.... and S1,S2, S3,....is the SGPA of semester I,II,III,.... .

#### 15. Declaration of class

**Although the GPA system is a stand-alone system of grading and not amenable to facile conversion to percent marks, in general, the conversion of CGPA to percent marks is:**

**CGPA x 9.5 = Percent marks.**

**The class shall be awarded on the basis of CGPA as follows:**

- First Class with Distinction = CGPA of. 7.37 and above
- First Class = CGPA of 6.32 to 7.36
- Second Class = CGPA of 6.00 to 6.31

## 16. Project work

All the students shall undertake a project under the supervision of a teacher in Semester III to IV and submit a report. Four copies of the project report shall be submitted.

### ➤ Writing the thesis

The thesis will be typed using Times New Roman font, size 11, 1.5 line spacing, with all headings/subheadings in bold.

**The thesis will be of maximum 125 pages and composed in the following manner:**

**Chapter 1** – Introduction. This should be limited to about 30 pages and will describe all background information of the research described in the thesis.

**Chapter 2** – Aims and objectives, limited to 2 pages.

**Chapter 3** – Plan of Work, limited to 4 pages

**Chapter 4** – Experimental. This section should preferably include only the optimized experiments from which the inferences and conclusions were drawn.

**Chapter 5** – Results and Discussion, this should constitute 40 to 50 pages of the thesis.

**Chapter 6** – References. This should be in ACS format. Refer to Ch. 14 *In The ACS Style Guide*; Coghill, A., et al.; American Chemical Society: Washington, DC, 2006.

**If any deviations are found in the style of writing the thesis, the thesis is liable to be rejected by the University.**

### Scheme of assessment for Thesis

Assessment	External Examiner	Internal (Guiding Teacher)	Total
	50% of marks	50% of marks	100%

The assessment of the thesis submitted at the end of Semester IV will be done by both the internal (guiding) teacher and an external examiner chosen from the industry with established competence in the field or may be any recognized research guide from another recognized university. It is proposed that every learner will submit a synopsis of the research work carried out by him/her during Semesters III and IV which forms the content of the thesis. A learner will be permitted to submit his/her synopsis no earlier than 20 months (after 20 months) from the beginning of the M. Pharm. program as instructed by the

Government/Regulatory Authority for the respective year, BUT will have to submit the final thesis by the end of 24 months from the beginning of the M. Pharm program as instructed by the Government/Regulatory Authority. The time between submission of synopsis and thesis should be at least one month. The learner must submit his thesis to the University in a format as prescribed by the University. The university will take all steps to conduct the *viva-voce* examination at the earliest after the submission of the thesis. It is expected that only the synopsis of the thesis submitted by the learner will be forward by the university to the external examiner at least one week before the conduct of the *viva-voce* examination. Only at the time of the *viva-voce* examination, the external examiner will be presented the thesis submitted by the candidate for the award of the degree.

The evaluation will be done by a pair of examiners (research guide and external examiner), appointed by and at the University, based on the report and a *viva-voce*. Final Grade reports are to be sent by the Institute to the respective section of university on completion of the *viva-voce*. The criteria of evaluation of Dissertation are given in the curriculum manual.

**Any late submission of synopsis or thesis will result in the learner requiring to keep terms for the next semester and any subsequent semester/s till the learner finishes his/her degree.**

The internal and external examiner appointed by the University shall evaluate the project. The projects shall be evaluated as per the criteria given below.

***Evaluation of Dissertation Book:***

<b>Objective(s) of the work done</b>	<b>50</b>
<b>Methodology adopted</b>	<b>150</b>
<b>Results and Discussions</b>	<b>250</b>
<b>Conclusions andOutcomes</b>	<b>50</b>
<b>Total</b>	<b>500 Marks</b>

***Evaluation of Presentation:***

<b>Presentation of work</b>	<b>100</b>
<b>Communication skills</b>	<b>50</b>
<b>Question and answers kills</b>	<b>100</b>
<b>Total</b>	<b>250 Marks</b>

**17. Award of degree**

Candidates who fulfill the requirements mentioned above shall be eligible for award of

degree during the ensuing convocation.

**18. Duration for completion of the program of study**

The duration for the completion of the program shall be fixed as per the norms of the University of Mumbai