Programme Specifications

M. Pharm. Programme

(Applicable for 2017-18 Batch onwards)

Faculty of Pharmacy

M. S. Ramaiah University of Applied Sciences

University House, New BEL Road, MSR Nagar, Bangalore – 560 054

www.msruas.ac.in

PROGRAMME SPECIFICATIONS: Pharmacognosy

Faculty	Faculty of Pharmacy (FPH)
Department	Department of Pharmacognosy
Programme	M.Pharm. in Pharmacognosy
Dean of Faculty	Dr.V. Madhavan
HOD	Dr.V. Madhavan

1. Title of the Award

M. Pharm. in Pharmacognosy

2. Modes of Study

Full-Time ☒ Part-Time ☐

3. Awarding Institution /Body

M.S.Ramaiah University of Applied Sciences – Bangalore, India

4. Joint Award

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5. Teaching Institution

Faculty of Pharmacy (FPH)

M.S.Ramaiah University of Applied Sciences – Bangalore, India

6. Month of Creation of Programme Specifications

February 2017

7. Programme Approval Month by the Academic Council of MSRUAS

April 2017

8. Next Review

March 2019

9. Programme Approving Regulatory Bodies and Date of Approval

Pharmacy Council of India (PCI), New Delhi

10. Programme Accrediting Body and Date of Accreditation

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11. Grade Awarded by the Accreditation Body

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12. Programme Accreditation Validity

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13. Programme Benchmark

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14. Rationale for the Programme

Pharmacognosy is a systematic study of crude drugs obtained from plant, animal and mineral sources. From time immemorial, curing of diseases commenced by experimenting with natural products leading to the modern drug therapy and this has made Pharmacognosy as the "mother" of all innovations. This is a multidisciplinary science, which deals with naturally derived drugs and it incorporates various modern analytical techniques to authenticate and standardize crude drugs as well as extracts. Thus, Pharmacognosy will remain to be a precursor and significant contributor in new drug discoveries. As per WHO reports nearly 70% of the world population use herbal/natural products towards treatment of various ailments due to the belief that they do not have any side effects unlike the modern synthetic drugs. To prove such belief and to benefit the patients suffering from various diseases, identification and standardization of herbal medicines are being carried out worldwide and the study of Pharmacognosy is very essential in this regard. Taking into consideration the excellent opportunities available in the field of pharmacognosy, post graduate course in M. Pharm**.** in Pharmacognosy is being offered.

The M.S. Ramaiah College of Pharmacy, now a constituent of MSRUAS as Faculty of Pharmacy has been in existence for more than two decades. Over the years, Faculty of Pharmacy of MSRUAS has grown and evolved as one of the Premier Institutions in the country. The University infrastructure, interdisciplinary facilities with latest technologies will empower the students to pursue high quality research with creativity and innovation. During the last two decades, the institution has produced over 1000 graduates and 120 Post graduates. The presence of other Faculties of Applied Sciences of the University will facilitate the students to experience more than the conventional curriculum.

Faculty of Pharmacy of MSRUAS offering M. Pharm programme in Pharmacognosy featured with semester pattern curriculum is aimed to emphasize the concepts in the isolation of novel compounds and design of dosage forms. Importance will be given to research projects based on industrial needs and in terms of novelty for patenting the application. The curriculum is structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts.

15. Programme Aim

Masters degree programme in Pharmacognosy is aimed to achieve the Postgraduates an advanced knowledge both in theoretical and applied topics; high order skills in analysis, critical evaluation and professional application; think differently and independently to solve complex problems related to research and pharmaceutical processes.

16. Programme Objectives

The objecives of the programme are:

1. To educate the students extensively and efficiently with strong theoretical and practical knowledge
2. To train the students in terms of rational and critical analysis and troubleshooting the problems effectively
3. To create research interest in the minds of students so that they take up research as a career with passion
4. To provide a general perspective and opportunities for a career in Pharmaceutics
5. To mould the students for a lifelong learning skills and make them work as a team to achieve the goal

17. Intended Learning Outcomes of the Programme

The intended learning outcomes are listed under four headings:

1. Knowledge and Understanding, 2. Cognitive Skills 3. Practical Skills

4. Capability/ Transferable Skills.

17.1 Knowledge and Understanding

After undergoing this programme, a student will be able to:

KU1: Discuss the theoretical aspects of extraction, identification and purification of phytoconstituents

KU2: Explain various concepts and designs for quality control of traditional formulations including regulatory requirements

KU3: Discuss the role of biotechnology in improving the quality and yield of crops

KU4: Select the pharmacological screening methods for herbal extracts and formulations

17.2 Cognitive Skills

After undergoing this programme, a student will be able to:

CS1: Develop techniques for new product development from natural sources

CS2: Design methods of standardization for herbal drug or formulations

CS3: Select appropriate pharmacological screening methods for herbal extracts and formulations

CS4: Apply statistical methods to analyse data

17.3 Practical Skills

After undergoing this programme, a student will be able to:

PS1: Identify herbal drugs having therapeutic value

PS2: Isolate and estimate various phytoconstituents from natural source

PS3: Prepare and evaluate herbal formulations and cosmetics

PS4: Perform screening of herbal drugs and formulations for their pharmacological activity

17.4 Capability/Transferable Skills

After undergoing the programme, a student will be able to:

TS1: Develop technical report after analysis of data and the process or procedure

TS2: Perform under constraints to meet the given targets

TS3: Work as a team and team leader to enhance the productivity of the group and the organization

TS4: Communicate the concepts, ideas and viewpoints through effective oral and written communication skills

18. Programme Structure

The following are the courses a student is required to successfully complete for the award of the degree. The course is delivered as per the Time-Table for every batch.

SEMESTER – I			
Course Code	**Courses**	**Credits**	**Hours/ Week**
DEPARTMENT COMMON COURSE			
MPG101T	1.Modern Pharmaceutical Analytical Techniques	4	4
PROGRAMME SPECIALIZATION COURSES			
MPG102T	1.Advanced Pharmacognosy I	4	4
MPG103T	2.Phytochemistry	4	4
MPG104T	3.Industrial Pharmacognostical Technology	4	4
MPG105P	4.Pharmacognosy Practical – I	6	12
MPG106	5.Seminar / Assignment	4	7
	Total	**26**	**35**
SEMESTER – II			
PROGRAMME SPECIALIZATION COURSES			
MPG201T	1. Medicinal Plant Biotechnology	4	4
MPG202T	2. Advanced Pharmacognosy II	4	4
MPG203T	3. Indian System of Medicine	4	4
MPG204T	4. Herbal Cosmetics	4	4
MPG205P	5. Pharmacognosy Practical – II	6	12
MPG206	6. Seminar / Assignment	4	7
	Total	**26**	**35**
SEMESTER – III			
FACULTY COMMON SPECIALIZATION			
MRM301T	1. Research Methodology and Biostatistics	4	4
MPJ302	2. Journal Club	1	1
MMC301	3. Group Project	4	-
MPR301	4. Discussion/Synopsis Presentation (Proposal Presentation)	2	2
MPR302	5. Research Work	14	28
	Total	**25**	**35**
SEMESTER – IV			
PROGRAMME SPECIALIZATION COURSES			
MPJ402	1. Journal Club	1	1
MPR403	2. Research Work	16	31
MPR404	3. Discussion / Interim-Final Presentation	3	3
	Total	**20**	**35**
MANDATORY COURSE/S			
MMC501	1. Participation /Presentation in research forum: National / International Seminar, Conferences,Workshops	1- 3	**-**
MMC502	2. Publication : National / International Journals		**-**
MMC503	3. Academic/Research award: State/National/International Agencies		**-**
	Minimum	**98**	
	Grand Total **Maximum**	**100**	

19. Programme Delivery Structure- Full-Time

The programme is delivered from Monday to Saturday of the week.

Normally from 9 AM to 1PM and 2PM-5 PM from Monday to Friday and 9AM to 1PM on Saturday

20. Teaching and Learning Methods

The programme delivery comprises of :

1. Face to Face Lectures using Audio-Visuals
2. Group Discussions, Presentations
3. Demonstrations
4. Guest Lectures
5. Laboratory/Field work/Workshops
6. Industry Visit
7. Seminars
8. Project Exhibitions
9. Case studies
10. Concept mapping

21. Mandatory Courses

Mandatory course/s can be any one or more of the following –

MMC501 **Participation / Presentation in Research Forum**

A student can participate /submit a paper and make a presentation in a conference, seminar, workshop, trainining programme or symposium related to the programme specialization which is approved by the department.

MMC502 **Publication in National / International Journal (Referred & Abstracted)**

A student can publish a review or research paper in a reputed scientific journal. The proof of submission and a copy of the paper shall be submitted to the department.

MMC503 **Academic/Research award from State / National/International Agencies**

A student with extraordinary accomplishment can participate and get academic excellence / research excellence awards from conferences/ competitions/recognised affiliated bodies and agencies.

MMC301 Group Project

A group project shall have up to 5 interdepartmental students within the faculty. The purpose of group project is that the group should be able to design/develop/evaluate a drug moiety, dosage form, product, data or process in their area of specializations. The students are required to develop a report for assessment and also need to demonstrate the final outcome. The IPR rights of all such work lies with the University only. The students are required to sign an agreement before the commencement of the project. The project should be approved by a committee of examiners before the start of the project. Students can choose a project from the database of projects available with the concerned department. The detailed procedure and evaluation procedure is available in the Operation Manual / i - portal.

22. MPG106 & MPG206 Seminar/ Assignment

Assignment: Every candidate shall submit a word processed assignment for individual theory courses in their first and second semester specialization.

Seminar: Every candidate shall present on the submitted assignment topic for individual theory courses in their first and second semester specialization.

The detailed procedure and evaluation procedure is available in the Operation Manual / i-portal.

23 MPJ301 & MPJ402

Journal Club

Evvery student shall critically appraise the research article of their specialization published in reputed journals. Students are trained for inquiry based learning and critical thinking skills. Students shall access journals adopting search engines and made to collect relevant data, analyze and comment on the findings with the submission of the document evidence and present on the same for assessment. The detailed procedure and evaluation procedure is available in the Operation Manual / I- portal.

24. MPR304 & MPR 403

Dissertation

Every candidate shall carry out work on an assigned research project under the guidance of a recognized Postgraduate teacher in the third and fourth semester, the result of which shall be written up and submitted in the form of a dissertation.

Work for writing the dissertation is aimed at contributing to the development of a spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.

The dissertation shall be examined by a minimum of two examiners; one internal (mentor) and one external examiner (outside the University).

25. Assessment and Grading

SEMESTER I

Course code	Course	Internal Assessment				Semester End Examination		Total Marks
		Continuous Mode	Sessional Examination		Total			
			Marks	Duration		Marks	Duration	
MPG 101T	Morden Pharmaceutical Analytical Techniques	10	15	1h.	25	75	3h.	100
MPG 102T	Advanced Pharmacognosy I	10	15	1h.	25	75	3h.	100
MPG 103T	Phytochemistry	10	15	1h.	25	75	3h.	100
MPG 104T	Industrial Pharmacognostical Technology	10	15	1h.	25	75	3h.	100
MPG 105P	Pharmacognosy Practical – I	20	30	6h.	50	100	6h.	150
MPG 106	Seminar / Assignment	-	-	-	-	-	-	100
							Total	**650**

SEMESTER II

Course code	Course	Internal Assessment				Semester End Examination		Total Marks
		Continuous Mode	Sessional Examination		Total			
			Marks	Duration		Marks	Duration	
MPG 201T	Medicinal Plant Biotechnology	10	15	1h.	25	75	3h.	100
MPG 202T	Advanced Pharmacognosy II	10	15	1h.	25	75	3h.	100
MPG 203T	Indian System of Medicine	10	15	1h.	25	75	3h.	100
MPG 204T	Herbal Cosmetics	10	15	1h.	25	75	3h.	100
MPG 205P	Pharmacognosy Practical – II	20	30	6h.	50	100	6h.	150
MPG 206	Seminar / Assignment	-	-	-	-	-	-	
							Total	**650**

SEMESTER III

Course code	Course	Internal Assessment				Semester End Examination		Total Marks
		Continuous Mode	Sessional Examination		Total			
			Marks	Duration		Marks	Duration	
MRM 301T	Research Methodology and Biostatistics	10	15	1h.	25	75	3h.	100
MPJ 302	Journal Club	-	-	-	25	-	-	25
MPR301	Discussion / Presentation (Proposal Presentation)	-	-	-	50	-	-	50
MPR 302	Research Work	-	-	-	-	350	1h.	350
					Total			**525**

SEMESTER IV

Course code	Course	Internal Assessment				Semester End Examination		Total Marks
		Continuous Mode	Sessional Examination		Total	Marks	Duration	
			Marks	Duration				
MPJ 402	Journal Club	-	-	-	25	-	-	25
MPR 403	Research Work	-	-	-		400	-	400
MPR 404	Discussion / Interim-Final Presentation	-	-	-	75	-	1h.	75
							Total	**500**

Theory

(Component -1 : 25 Marks + Component-2: 75Marks)

Component - 1: - 25 Marks

It has two sub-components (Part A & B)

Part – A: Continuous Evaluation :10 Marks

The marks allocated for Continuous mode of internal assessment shall be awarded as per the scheme given below:

Scheme for awarding Continuous Evaluation -Theory

Criteria	Maximum marks
Attendance *	8
Student –Teacher Interaction	2
Total	**10**

Guidelines for allotment of marks for attendance*

Percentage of Attendance	Theory
95-100	8
90-94	6
85-89	4
80-84	2
Less than 80	0

Scheme for awarding Continuous Evaluation -Theory

Criteria	Maximum marks
Attendance*	8
Student–Teacher Interaction**	2
Total	10

** student will be continuously assessed during theory and practical sessions

Part – B: Sessional Examination : 15 Marks

Two sessional examinations (each for 15 Marks with one hour duration) will be conducted. Average marks of the two sessionals will be computed for sessional examination marks.

Component -2 Semester End Theory Examination :75 Marks

Theory Examination : A theory exam shall be conducted for maximum marks 75 Marks with three hours of duration

Practical – 150 Marks

(Component -1: 50 Marks + Component-2: 100Marks)

Component - 1: 50 Marks

It has two sub-components (Part A & B)

Part – A: Continuous Evaluation :20 Marks

The marks allocated for Continuous mode of internal assessment shall be awarded as per the scheme given below:

Scheme for awarding Continuous Evaulation -Practical

Criteria	Maximum marks
Attendance *	10
Practical Records, Regular viva-voce	10
Total	20

Guidelines for allotment of marks for attendance*

Percentage of Attendance	Practical
95-100	10
90-94	7.5
85-89	5
80-84	2.5
Less than 80	0

Part – B: Sessional Examination : 30 Marks

Two sessional examinations (each for 30 Marks with six hour duration) will be conducted. Average marks of the two sessionals will be computed for sessional examination marks.

Component -2 Semester End Practical Examination : 100Marks

Practical Examination: 100 Marks with six hours of duration. Practical examination shall also consist of a viva –voce (Oral) examination.

The assessment questions are set to test the learning outcomes. In each component a certain learning outcome is assessed.

Note: For more details on the break-ups, please refer to the Course Specifications

A student is required to score an overall 50% for successful completion of a course and earn the credits.

Note: Final marks awarded in each of the courses will be confirmed only after SAB/PAB as explained in Academic Regulations of M. Pharm. Programme.

Assignment & Seminar

The detailed procedure and evaluation procedure is available in the Operation Manual / Student Handbook/Academic Regulations.

Journal Club

The detailed procedure and evaluation procedure is available in the Operation Manual / Student Handbook/Academic Regulations.

Group Project

The detailed procedure and evaluation procedure is available in the Operation Manual / Student Handbook/Academic Regulations

Mandatory Courses

The credit points assigned for extracurricular and or co-ccurricular activities shall be given by the Dean of the Faculty and the same shall be submitted to the University.

Name of the activity	Maximum credit points Eligible/Activity
Participation in National Level Seminar/Conference/Workshop/Symposium/ Training	01
Participation in International Level outside India Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)	02
Academic Award/Research Award from State Level/National Agencies	01
Academic Award/Research Award from International Agencies	02
Research / Review Publication in National Journals (Indexed in Scopus / Web of Science)	01
Research / Review Publication in International Journals (Indexed in Scopus / Web of Science)	02

Dissertation

1. Every candidate shall carry out work on an assigned research project under the guidance of a recognized Postgraduate Teacher, the result of which shall be written up and submitted in the form of a dissertation.

2. Work for writing the Dissertation is aimed at contributing to the development of spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis, acquaintance with the latest advances in pharmaceutical/medical sciences and the manner of identifying and consulting available literature. Dissertation shall be submitted as per the notified time schedule mentioned in the Academic calender / student hand book.

3. The Dissertation and viva-voce shall be evaluated by two examiners, one Internal and one External examiner appointed by the University.

Scheme of Evaluation of Dissertation book:

Objective(s) of the work done	: 50 Marks
Methodology adopted	: 150 Marks
Results and Discussions	: 250 Marks
Conclusions and Outcomes	: 50 Marks
Total	**: 500 Marks**

Scheme of Evaluation of Presentation:

Presentation of work	: 100 Marks
Communication skills	: 50 Marks
Question and answer skills	: 100 Marks
Total	**: 250 Marks**

A student is required to score a minimum of 50% overall for successful completion of Dissertation and earn the corresponding credits.

Supplementary/re-registration examination and improvement of sessional marks

The eligibility criteria and procedures for supplementary examination and improvement of sessional marks are as per the Pharmacy Council of India (PCI) norms and as indicated in the Academic Regulations governing this programme.

26. Attendance

A student is required to have a minimum of 85% attendance to be eligible to appear for the

examination. Any condoning is as per the Academic regulations of M. Pharm. programme.

27. Award of Class

As per the Academic Regulations for M. Pharm. Programme

28. Student Support for Learning

Students are given the following support:

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

29. Quality Control Measures

The following are the Quality Control Measures:

1. Review of Course Notes
2. Review of Question Papers and Assignment
3. Student Feedback
4. Moderation of Assessed work
5. Opportunities for the students to see their assessed work
6. Review by External Examiners and External Examiners Reports
7. Staff Student Consultative Committee Meetings
8. Student Exit Feedback
9. Subject Assessment Board
10. Programme Assessment Board

30. Curriculum Map

Course Code	Intended Learning Outcomes											
	Knowledge and Understanding				Cognitive (Thinking) Skills Critical, Analytical, Problem solving, Innovation				Practical Skills			
	KU1	KU2	KU3	KU4	CS1	CS2	CS3	CS4	PS1	PS2	PS3	PS4
MPG101T		X			X							
MPG102T	X				X							
MPG103T	X	X				X						
MPG104T		X				X						
MPG105P									X	X	X	
MPG106	X	X	X	X	X	X	X					
MPG201T	X		X		X							
MPG202T				X								
MPG203T		X			X							
MPG204T		X			X	X						
MPG205P									X	X	X	X
MPG206	X	X	X	X	X	X	X					
MRM301T	X	X	X	X	X	X	X	X	X	X	X	X
MPJ302								X				
MMC301	X	X	X	X	X	X	X	X				
MPR303	X	X	X	X	X	X	X	X				
MPR304	X	X	X	X	X	X	X	X				
MPJ402									X	X	X	X
MPR403	X	X	X	X	X	X	X	X				
MPR404									X	X	X	X
MMC501					X							
MMC502					X							
MMC503					X							

31. Capability / Transferable Skills Map

Course Code	Group work	Self learning	Research Skills	Written Communication Skills	Verbal Communication Skills	Presentation Skills	Behavioral Skills	Information Management	Personal management/ Leadership Skills
MPG101T	X	X		X	X	X	X	X	X
MPG102T	X	X		X	X	X	X	X	X
MPG103T	X	X		X	X	X	X	X	X
MPG104T	X	X		X	X	X	X	X	X
MPG105P	X	X	X	X	X	X	X	X	X
MPG106		X		X	X	X		X	X
MPG201T	X	X		X	X	X	X	X	X
MPG202T	X	X		X	X	X	X	X	X
MPG203T	X	X		X	X	X	X	X	X
MPG204T	X	X		X	X	X	X	X	X
MPG205P	X	X	X	X	X	X	X	X	X
MPG206		X		X	X	X		X	X
MRM301T	X	X		X	X	X	X	X	X
MPJ302	X	X		X	X	X	X	X	X
MMC301	X	X	X	X	X	X	X	X	X
MPR303		X		X	X	X			
MPR304	X	X	X		X		X	X	X
MPJ402	X	X		X	X	X	X	X	X
MPR403		X		X	X	X			
MPR404	X	X	X		X		X	X	X
MMC501		X	X	X	X	X	X	X	X
MMC502		X	X	X	X	X	X	X	X
MMC503		X	X	X	X	X	X	X	X

32. Co-curricular Activities

Students are encouraged to take part in co-curricular activities like seminars, conferences, symposium, paper writing, attending industry exhibitions, project competitions and related activities to enhance their knowledge and network.

33. Cultural and Literary Activities

To remind and ignite the creative endeavors annual cultural festivals are held and the students are made to plan and organize the activities

34. Sports and Athletics

Students are encouraged to develop a habit of playing games on daily basis and also take part in annual sports and athletic events.