**INSTITUTE OF PHARMACEUTICAL SCIENCES, KUK**

**Scheme of examination M. Pharmacy w.e.f. 2017-18**

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

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

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Specialization** | **Code** |
| 1. | Pharmaceutics | MPH |
| 2. | Pharmaceutical Chemistry | MPC |
| 3. | Pharmacology | MPL |
| 4. | Pharmacognosy | MPG |

The course of study for M.Pharm specializations shall include Semester wise

 Theory & Practical as given in Table – 2 to 7.

**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 | 100 |
|  | Seminar/Assignment | 7 | 4 | 7 | 100 |
| Total | 35 | 26 | 35 | **650** |
| **Semester-II** |
| MPH201T | Molecular Pharmaceutics (Nano Tech and targeted DDS) | 4 | 4 | 4 | 100 |
| MPH202T | Advanced Biopharmaceutics & Pharmacokinetics | 4 | 4 | 4 |  100 |
| MPH203T | Computer Aided Drug development | 4 | 4 | 4 | 100 |
| MPH204T | Cosmetics and Cosmeceuticals | 4 | 4 | 4 | 100 |
| MPH205T | Pharmaceutics Practical II | 12 | 6 | 12 | 150 |
|  | Seminar / Assignment | 7 | 4 | 7 | 100 |
|  | **Total** | 35 | 26 | 35 | **650** |

**Table -3: Course of study for M. Pharm. (Pharmaceutical Chemistry)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Credit Hours** | **Credit Points** | **Hrs/Wk** | **Marks** |
| **Semester I** |
| MPC101T | Modern Pharmaceutical Analytical Techniques | 4 | 4 | 4 | 100 |
| MPC102T | Advanced Organic Chemistry-I | 4 | 4 | 4 | 100 |
| MPC103T | Advanced Medicinal Chemistry | 4 | 4 | 4 | 100 |
| MPC104T | Chemistry of Natural Products | 4 | 4 | 4 | 100 |
| MPC105T | Pharmaceutical Chemistry Practical I | 12 | 6 | 12 | 150 |
|  | Seminar/Assignment | 7 | 4 | 7 | 100 |
| Total | 35 | 26 | 35 | **650** |
| **Semester II** |
| MPC201T | Advanced Spectral Analysis | 4 | 4 | 4 | 100 |
| MPC202T | Advanced Organic Chemistry-II | 4 | 4 | 4 | 100 |
| MPC203T | Computer Aided Drug Design | 4 | 4 | 4 | 100 |
| MPC204T | Pharmaceutical Process Chemistry | 4 | 4 | 4 | 100 |
| MPC205T | Pharmaceutical Chemistry Practical II | 12 | 6 | 12 | 150 |
|  | Seminar/Assignment | 7 | 4 | 7 | 100 |
| Total | 35 | 26 | 35 | **650** |

**Table-4: Course of Study for (Pharmacology)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Credit Hours** | **Credit Points** | **Hrs/Wk** | **Marks** |
| **Semester I** |
| MPL101T | Modern Pharmaceutical Analytical Techniques | 4 | 4 | 4 | 100 |
| MPL102T | Advanced Pharmacology-I | 4 | 4 | 4 | 100 |
| MPL103T | Pharmaceutical and Toxicological Screening Methods-I | 4 | 4 | 4 | 100 |
| MPL104T | Cellular and Molecular Pharmacology | 4 | 4 | 4 | 100 |
| MPL105T | Pharmacology Practical I | 12 | 6 | 12 | 150 |
|  | Seminar/Assignment | 7 | 4 | 7 | 100 |
| Total | 35 | 26 | 35 | **650** |
| **Semester II** |
| MPL201T | Advanced Pharmacology II | 4 | 4 | 4 | 100 |
| MPL202T | Pharmacological and Toxicological Screening Methods-II | 4 | 4 | 4 | 100 |
| MPL203T | Principals of Drug Discovery | 4 | 4 | 4 | 100 |
| MPL204T | Experimental Pharmacology Practical-II | 4 | 4 | 4 | 100 |
| MPL205T | Pharmacology Practical-II | 12 | 6 | 12 | 150 |
|  | Seminar/Assignment | 7 | 4 | 7 | 100 |
|  Total | 35 | 26 | 35 | **650** |

**Table-5: Course of Study for (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 |
| MPG105T | 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 |
| MPG202T | Advanced Pharmacognosy-II | 4 | 4 | 4 | 100 |
| MPG203T | Indian System of medicine | 4 | 4 | 4 | 100 |
| MPG204T | Herbal Cosmetics | 4 | 4 | 4 | 100 |
| MPG205T | Pharmacognosy 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 III semester (Common for all specializations)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course** | **Credit Hours** | **Credit Points** |
| MRM301T | 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 -7 : 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 | 20 | 20 |

**Table -8 : Semester wise credits distribution**

|  |  |
| --- | --- |
| I | 26 |
| II | 26 |
| III | 21 |
| IV | 20 |
| Co-curricular Activities(Attending conference, scientific presentation and other scholarly activities) | Minimum=02Maximum=7\* |
| Total Credits Points | Minimum=95Maximum-100\* |

\*Credits Points for Co-curricular Activities

**Table-9: Guidelines for Awarding Credit Points for Co-curricular Activities**

|  |  |
| --- | --- |
| **Name of the Activity** | **Maximum Credit Points Eligible/Activity** |
| Participation in National LevelSeminar/Conference/Workshop/Symposium/TrainingProgram (related to the specialization of the student) | 01 |
| Participation in National LevelSeminar/Conference/Workshop/Symposium/TrainingProgram (related to the specialization of the student) | 02 |
| Academic Award/Research Award from StateLevel/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 |

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.

**Table-10: Scheme for Internal assessment and end semester (Pharmaceutics-MPH)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Internal Assessment** | **Total** | **End Semester Exam** | **Total Marks** |
| **Continuous Mode** | **Sessional Exam** |
| **Marks** | **Marks** | **Marks** | **Duration** |  |
| **SEMESTER I** |
| MPH101T | Modern Pharmaceutical Analytical Techniques | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH102T | Drug Delivery System | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH103T | Modern Pharmaceutical | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH104T | Regulatory Affair | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH105T | Pharmaceutics Practical I | 20 | 30 | 6 Hr | 50 | 100 | 6 Hrs | 150 |
| - | Seminar/Assignment |  |  |  |  |  |  | 100 |
| **Total** | **650** |
| **SEMESTERII** |  |
| MPH201T | Molecular Pharmaceutical Nano Tech and Targeted (DDS) | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH202T | Advanced Biopharmaceutics & Pharmacokinetics | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH203T | Computer Aided Drug Development | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH204T | Cosmetic and cosmecutical | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPH205T | Pharmaceutical CS Practical II | 20 | 30 | 6hrs | 50 | 100 | 6hrs | 150 |
|  | Seminar/Assignment | - | - | - | - | - | - | 100 |
| **Total** | **650** |

**Table -11 : Schemes for internal assessments end semester (Pharmaceutical Chemistry-MPC)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Internal Assessment** | **Total** | **End Semester Exam** | **Total Marks** |
| **Continuous Mode** | **Sessional Exam** |
| **Marks** | **Marks** | **Marks** | **Duration** |  |
| **SEMESTER I** |
| MPC101T | Modern Pharmaceutical Analytical Techniques | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPC102T | Adv Org-I | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPC103T | Adv MedchemI | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPC104T | CNP | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPC105T | Pharm Chem Practical I | 20 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 150 |
|  | Seminar/Assignment |  | 30 | 6 hrs | 50 | 100 |  6Hrs | 100 |
| **Total** | **650** |
| **Course Code** | **Course** | **Internal Assessment** | **Total** | **End Semester Exam** | **Total Marks** |
| **Continuous Mode** | **Sessional Exam** |
| **Marks** | **Marks** | **Marks** | **Duration** |  |
| **SEMESTER II** |
| MPC201T | Advance Spectral analysis | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPC202T | Advanced Organic ChemII | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPC203T | Computer Aided Drug Design | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPC204T | CNP Process Chem. | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPC205T | Pharm Chem Practical II | 20 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 150 |
|  | Seminar/Assignment |  | 30 | 6 hrs | 50 | 100 | 6Hrs | 100 |
| **Total** | **650** |

**Table -12 : Schemes for internal assessments and end semester Examinations (Pharmacology-MPL)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Internal Assessment** | **Total** | **End Semester Exam** | **Total Marks** |
| **Continuous Mode** | **Sessional Exam** |
| **Marks** | **Marks** | **Marks** | **Duration** |  |
| **SEMESTER I** |
| MPL101T | Modern Pharmaceutical Analytical Techniques | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPL102T | Advanced Pharmacology-I | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPL103T | Pharmacological and Toxicological Screening Methods-I | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPL104T | Cellular and Molecular Pharmacology | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 100 |
| MPL105T | Experimental Pharmacology-I | 20 | 15 | 1 Hr | 25 | 75 | 3 Hrs | 150 |
|  | Seminar/Assignment |  | 30 | 6 hrs | 50 | 100 | 6Hrs | 100 |
| **Total** | **650** |
| **SEMESTER II** |
| MPL201T | Advanced Pharmacology II | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPL202T | Pharmacological and Toxiocological Screening Methods II | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPL203T | Principals of Drug Discovery | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPL204T | Clinical Research and Pharmacovigilance | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPL205T | Experimental Pharmacology-II | 20 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 150 |
|  | Seminar/Assignment |  | 30 | 6 hrs | 50 | 100 |  6Hrs | 100 |
| **Total** | **650** |

**Table -13 : Schemes for internal assessments and end semester Examinations (Pharmacognosy-MPG)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Internal Assessment** | **Total** | **End Semester Exam** | **Total Marks** |
| **Continuous Mode** | **Sessional Exam** |
| **Marks** | **Marks** | **Marks** | **Duration** |  |
| **SEMESTER I** |
| MPG101T | Modern Pharmaceutical Analytical Techniques | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG102T | Advanced Pharmacognosy-I | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG103T | Phytochemistry | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG104T | Industrial pharmacognostical Technology | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG105T | Pharmacognosy Practical I | 20 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 150 |
|  | Seminar/Assignment |  | 30 | 6 hrs | 50 | 100 |  6Hrs | 100 |
| **Total** | **650** |
| **SEMESTER II** |
| MPG201T | Medicinal Plant biotechnology | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG202T | Advanced Pharmacognosy-II | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG203T | Indian System of medicine | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG204T | Herbal Cosmetics | 10 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 100 |
| MPG205T | Pharmacognosy Practical-II | 20 | 15 | 1 Hr | 25 | 75 | 3 Hrs  | 150 |
|  | Seminar/Assignment |  | 30 | 6 hrs | 50 | 100 |  6Hrs | 100 |
| **Total** | **650** |

**Table -14 : Schemes for internal assessments and end semester Examinations (Semester III & IV)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course** | **Internal Assessment** | **Total** | **End Semester Exam** | **Total Marks** |
| **Continuous Mode** | **Sessional Exam** |
| **Marks** | **Marks** | **Marks** | **Duration** |  |
| SEMESTER III |
| MRM301T | Research Methodology and Biostastics\* | 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 |
| **Total** | **525** |
| **SEMESTER IV** |
|  | Journal Club | - | - | - | 25 | - |  | 25 |
|  | Discussion/Presentation (Proposal Presentation) | - | - | - | 75 | - |  | 75 |
|  | Research Work and Colloquium | - | - | - | - | 400 | 1 Hr | 400 |
| **Total** | **500** |

\*Non-University Exam.

Internal assessment: Continuous mode

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

**Table- 15: Scheme for awarding internal assessment: Continuous mode**

|  |
| --- |
| **Theory** |
| **Criteria** | **Maximum Marks** |
| Attendance (Refer Table-16) | 8 |
| Student – Teacher interaction | 2 |
| Total | 10 |
| **Practical** |
| Attendance (Refer Table-16) | 10 |
| Based on Practical Records, Regular viva voce, etc. | 10 |
| **Total** | **20** |

Table -16: Guidelines for the allotment of marks for attendance

|  |  |  |
| --- | --- | --- |
| **Percentage of Attendance** | **Theory** | **Practical** |
| 95-100 | 8 | 10 |
| 90-94 | 6 | 7.5 |
| 85-89 | 4 | 5 |
| 80-84 | 2 | 2.5 |
| Less than 80 | 0 | 0 |

**Reexamination of end semester examinations:**

Reexamination of end semester examination shall be conducted as per the schedule given

in table 17. The exact dates of examinations shall be notified from time to time.

**Table-17: Tentative schedule of end semester examinations**

|  |  |  |
| --- | --- | --- |
| Semester | For Regular Candidates | For failed Candidates |
| I and II | November/December | May/June |
| II and IV | May/June | November/December |

**Grading of performances (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-18.

**Table-18: 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.

**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 weighed average of the grade points obtained in all the courses by the student during the semester. For example, if a student takers five courses (Theory/Practical) in a semester with credit 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:

C1G1 + C2G2 + C3G3 + C4G4

SGPA = -----------------------------------------------

 C1 + C2 + C3 + C4

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:

C1G1 + C2G2 + C3G3 + C4\* ZERO

SGPA = -----------------------------------------------

 C1  + C2 + C3 + C4

**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 statusin 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:

 CI SI+C2S2+S3S3+S4S4

CGPA= ………………………

 C1+C2+C3+C4

WhereC1+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…………

**Declaration of class**

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

 First Class with Distinction = CGPA of 7.50 and above

 Second Class = CGPA of 5.00 to 5.99

**Journal Club/Proposal Presentation/Research work:**

Each student of M.Pharm Course in semester III and IV will be evaluated by the committee constituted by the Director of the institute based upon his/her performance in Journal club/Proposal presentation/research work done for dissertation. Each student will have to give a seminar in III semester (Research work) based on the progress of his/her research work and evaluated on the following criteria:

Evaluation of research work

Presentation of work : 150 marks

Communication of work : 50 marks

Question and answer skills : 150 marks

Total : 350 marks

**Dissertation /Project/Research/Colloquium work:**

All the students shall undertake a project under the supervision of a teacher of the institute of the institute in Semester III. At the end of semester IV, each student will submit 4 copies of the project report (typed & bound copy not less than 75 pages).

The internal and external examiner appointed by the University shall jointly evaluate the dissertation/project/research work/colloquium (at the end of 4th Semester) based on the following criteria:

Dissertation Evaluation : 250

Viva-voce :150 400

**Evaluation of Dissertation**

Objective(s) of the work done : 50 marks

Methodology adopted : 100 marks

Results and Discussions : 50 marks

Conclusions and Outcomes : 50 marks

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 Total : 250 Marks

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Viva-voce

Presentation of work : 50 marks

Communication skills : 25 marks

Question and answer skills : 75 marks

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 Total : 150 Marks

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