

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

DEPARTMENT OF MATHEMATICS AND STATISTICS

Master of Science/ Arts (M.Sc./M.A.) 2023-24

Faculty : SCIENCE

Subject : MATHEMATICS

Proposed Mathematics Courses for CBCS in 2-year M.Sc. Program: Semester wise types, codes, titles, Delivery type, Workload, Credits of the courses, Marks of Examination and Remarks.

| Level | Semester | Course Type | Course Code | Title | Delivery Type | | | Credit | Total Credit | Internal Assessment | EoS Exam | M.M. | Remarks | |
|----------|---------------------|--|-------------|---|---------------|---|---|--------|--------------|---------------------|--|------|--|--|
| | | | | | L | T | P | | | | | | | |
| 8 | I | DCC | MAT8000T | Advanced Abstract Algebra-I | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT8001T | Measure Theory | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT8002T | Differential Equations & Calculus of Variations | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT8003T | Differential Geometry | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| 8 | II | DCC | MAT8004T | Advanced Abstract Algebra-II | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT8005T | Complex Analysis | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT8006T | Special Functions | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | Select any one of the following Generic Elective Course (GEC) Courses in II semester, May be obtained by the students of other Departments. | | | | | | | | | | | | |
| | | GEC | MAT8100T | Dynamics of Rigid Bodies | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT8101T | Matrix Algebra | L | - | - | 4 | 4 | 20 | 80 | 100 | For students other than Mathematics & Statistics | |
| | | | MAT8102T | Number Theory | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| MAT8103T | Counting Techniques | | L | - | - | 4 | 4 | 20 | 80 | 100 | For students other than Mathematics & Statistics | | | |

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|-------|----------|--|-------------|-------------------------------------|---------------|---|---|--------|--------------|---------------------|----------|------|--|--|
| | | | | | L | T | P | | | | | | | |
| 9 | III | DCC | MAT9007T | Topology | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT9008T | Relativity and Tensor Analysis | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | Select any one (total two) Discipline specific Elective (DSE) Courses from each DSE group of the following in III semester. | | | | | | | | | | | | |
| | | DSE-I | MAT9104P | Computer Programming in-C | L | - | P | 2+4 | 6 | 20 | 80 | 100 | Students of B.Sc. (Comp. Sci.) can't opt. | |
| | | | MAT9105T | Numerical Analysis | L | T | - | 5+1 | 6 | 20 | 80 | 100 | If N.A. not opted at UG level | |
| | | | MAT9106T | Integral Transforms | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | DSE-II | MAT9107T | Discrete Mathematics-I | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT9108T | Optimization Techniques-I | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT9109T | Mathematical Theory of Statistics-I | L | T | - | 5+1 | 6 | 20 | 80 | 100 | Students of B.Sc. (Statistics) can't opt | |
| | | Select any one of the following Generic Elective Course (GEC) Courses (optional) in III semester, May be obtained by the students of other Departments. | | | | | | | | | | | | |
| | | GEC | MAT9110T | Applied Mathematics | L | - | - | 4 | 4 | 20 | 80 | 100 | For students other than Mathematics & Statistics | |
| | | | MAT9111T | Inventory Management | L | - | - | 4 | 4 | 20 | 80 | 100 | --- | |
| | | | MAT9112P | Mathematica | - | - | P | 4 | 4 | 20 | 80 | 100 | --- | |

| Level | Semester | Course Type | Course Code | Title | Delivery Type | | | Credit | Total Credit | Internal Assessment | EoS Exam | M.M. | Remarks | |
|-------|----------|---|-------------|---|---------------|---|---|--------|--------------|---------------------|----------|------|---|--|
| | | | | | L | T | P | | | | | | | |
| 9 | IV | DCC | MAT9009T | Functional Analysis | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | Select any one (total three) Discipline specific Elective (DSE) Courses from each DSE group of the following in IV semester. | | | | | | | | | | | | |
| | | DSE-I | MAT9113P | Computer Programming of Numerical Methods | L | - | P | 2+4 | 6 | 20 | 80 | 100 | If opted C- Prog. as DSE in M.Sc. III Sem | |
| | | | MAT9114T | Advanced Numerical Analysis | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT9115T | Integral Equations | L | T | - | 5+1 | 6 | 20 | 80 | 100 | If opted IT as DSE in M.Sc. III Sem | |
| | | DSE-II | MAT9116T | Discrete Mathematics-II | L | T | - | 5+1 | 6 | 20 | 80 | 100 | If opted DM-I as DSE in M.Sc. III Sem | |
| | | | MAT9117T | Optimization Techniques-II | L | T | - | 5+1 | 6 | 20 | 80 | 100 | If opted OT-I as DSE in M.Sc. III Sem | |
| | | | MAT9118T | Mathematical Theory of Statistics-II | L | T | - | 5+1 | 6 | 20 | 80 | 100 | If opted MTS-I as DSE in M.Sc. III Sem | |
| | | DSE-III | MAT9119T | General Relativity and Cosmology | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT9120T | Viscus Fluid Dynamics | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |
| | | | MAT9121T | Advanced Differential Geometry | L | T | - | 5+1 | 6 | 20 | 80 | 100 | --- | |

OT-I: Optimization Techniques-I

MTS-I: Mathematical Theory of Statistics-I

DM-I: Discrete Mathematics-I

IT: Integral Transforms

N.A.: Numerical Analysis

DCC- Discipline Centric Compulsory

Course (MAT8000T to MAT8006T, MAT9007T to MAT9009T)

DSE- Discipline Specific Core Course

(MAT9104P, MAT9105T to MAT9109T, MAT9113P, MAT9114T to MAT9121T)

GEC- Generic Elective Course

(MAT8100T to MAT8103T, MAT9110T, MAT9111T & MAT9112P)

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

M.Sc./M.A. (Two Years Degree Program)

Subject: MATHEMATICS

End of Semester (EoS) Examination pattern of Theory Papers:

As proposed in the academic council held on 26-06-2023.

Internal Examination

Duration: 1 hour

Max. Marks: 20

Min Marks: 08

Internal Examination:

1. The maximum marks of each paper shall be 20. The minimum passing marks shall be 8. In all papers except "Project" it will consist of two parts: a test (10 marks) and an internal assessment (10 marks).
2. The format or pattern of the test can be decided by the department.
3. The internal assessment shall be of maximum marks 10. This part shall be based on the performance of students in the assignments/seminars/quiz etc. In case of assignments, the teacher will give at least five assignments distributed over the entire course contents. These will be submitted by the students to the teacher for evaluation and submit awards. In Laboratory/Practical papers, internal assessment shall be done by checking the record of practical or organizing a quiz during classes or may academically rationale method decided by the department.
4. In the paper entitled "Project", student will submit a report on the progress of the work done during the semester to the Head. The report will be routed through the Mentor with his grading who will also award the internal marks of the "Project".
5. Students have to independently pass in the internal examination of each paper.
6. The marks awarded in the internal examination shall not be counted to calculate and award the final score, SGPA and the CGPA.

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

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Subject: MATHEMATICS

End of Semester (EoS) Examination pattern of Practical Exam.:

Duration: 5 hours

Max. Marks: 80

Min Marks: 32

The examination shall be of five hours wherein the students have to perform any two practicals' selecting one from each part.

The marks distribution shall be the following:

1. Two Practical's (Formation, coding and execution): 50 Marks (25 + 25)
2. Viva Voce: 20 Marks
3. Evaluation of the record book of practical's performed in the semester: 10 Marks