

B.Sc (MPCs) Course Structure

1 Year

| SEMESTER - I | SEMESTER - II |
|--|---|
| English - I | English - I |
| Second Language | Second Language |
| Human Values and Professional Ethics | Indian Heritage and Culture |
| Mathematics-I (Differential Calculus) Theory | Mathematics-II:Differential Equations (Theory) |
| Mathematics-I (Differential Calculus) Practical | Mathematics-II:Differential Equations (Practical) |
| Physics- I: (Mechanics) Theory | Physics- II: (Electricity, Magnetism& EMT) (Theory) |
| Physics- I: (Mechanics) Practical | Physics- II: (Electricity, Magnetism& EMT)(Practical) |
| Computer Science-I (Object Oriented Programming using C ++) Theory | Computer Science-II:Data Structures and file processing(Theory) |
| Computer Science-I (Object Oriented Programming using C ++) Practical | Computer Science-II:Data Structures and file processing (Practical) |

II Year

| SEMESTER - III | SEMESTER - IV |
|--|---|
| English – III | English – IV |
| Second Language | Second Language |
| Environmental Studies | Science & Civilization |
| Mathematics-III:Real Analysis (Theory) | Mathematics-IV: Algebra (Theory) |
| Mathematics-III:Real Analysis (Practical) | Mathematics-IV : Algebra (Practical) |
| Physics- III: (Thermal Physics & Statistical Mechanics)Theory | Physics- IV: Waves and Optics (Theory) |
| Physics- III: (Thermal Physics & Statistical Mechanics)Practical | Physics-IV:Waves and Optics(Practical) |
| Computer Science-III:Numerical Computing (Theory) | Computer Science-IV :Design and Analysis of Algorithms (Theory) |

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|--|---|
| Computer Science-III: Numerical Computing (Practical) | Computer Science-IV: Design and Analysis of Algorithms(Practical) |
| Choose any one: 1. VectorCalculus(Mathematics) 2.Linear Programming Problems (Mathematics) 3.Renewable Energy & Energy Harvesting (Physics) | Choose any one: 1. Multiple Integral.(Mathematics) 2.Transportation, Assignment Problems and Job sequencing (Mathematics) 3. Applied Optics(Physics) |

Third Year

| SEMESTER - V | SEMESTER - VI |
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| Choose any one: Mathematics-V:(Theory) 1. Numerical Analysis 2.Complex Analysis | Choose any one: Mathematics-VI: (Theory) 1. Linear Algebra 2. Matrices |
| Mathematics-V : (Practical) 1. Numerical Analysis 2. Complex Analysis | Mathematics-VI: (Practical) 1. Linear Algebra 2. Matrices |
| Choose any one: Physics- V: (Theory) 1. Elements of Modern Physics 2. Digital, Analog and Instrumentation 3. Mathematical Physics. | Choose any one: Physics-VI: (Theory) 1. Quantum Mechanics 2. Nuclear and Particle Physics 3. Solid State Physics. |
| Physics-V: (Practical) 1. Elements of Modern Physics 2. Digital, Analog and Instrumentation 3. Mathematical Physics. | Physics-VI:(Practical) 1. Quantum Mechanics 2. Nuclear and Particle Physics 3. Solid State Physics. |
| Choose any one: Computer Science-V (Theory) 1. Operating Systems 2.Data Mining 3. Cryptography | Choose any one: Computer Science-VI (Theory) 1.Information Security 2.Database Applications 3.Computer Networks |
| Computer Science-V (Practical) 1. Operating Systems 2.Data Mining 3. Cryptography | Computer Science-VI (Practical) 1.Information Security 2.Database Applications 3.Computer Networks |
| Choose any one: 1. Numerical Methods (Mathematics) 2. Number Theory (Mathematics) 3. Electrical Circuits & Network Analysis(Physics) 4.ComputerGraphics(Computer Science) 5.Electronic Commerce(Computer Science) | Choose any Subject: Project (Mathematics / Physics / Computer Science) |

Course Outcome

At the end of the course, students develop problem solving skills and learn various concepts which help in developing logical tools and models used to solve various real life problems. Also the students learn traditional techniques of solving algebraic, transcendental equations, differential and integral equations, which have applications in many disciplines. The students would attain a sound level in basic physics, and laid a secure foundation for research and higher studies. The students will have developed problem-solving skills, experimental and data analysis skills in physics. They learn various concepts which help them in understanding physical phenomenon in nature. In computer science, students develop ability to write algorithms for problems ranging from simple to complex. They understand the practical implementation of the algorithms using programming languages like C, C++, Java and Web Technologies and develop programs, appreciate the implications of operating systems in development of computing systems to solve the problems in best possible way. The students will be able to find the role of databases for the organization and to apply them to the real world.