## MEENAKSHI COLLEGE FOR WOMEN, CHENNAI – 24
## Department of Physics
## B.Sc.

**Programme Outcome:**
The Undergraduate B.Sc Programme forms the basis of science and inculcates the fundamental knowledge to understand basic scientific principles and methods and create scientific awareness among students.

**B.Sc Physics (Programme Specific Outcome)**

The UG Programme aims at exposing the student to a broad spectrum of fundamental knowledge and training in logical and scientific thinking.

* To develop scientific temper and ability to understand scientific principles
* To impart knowledge of Physics in the field of Mechanics, Thermodynamics, Optics, Electricity and Electromagnetism, Nuclear Physics, Electronics and Quantum Mechanics
* To understand concepts of Physics through mathematical techniques
* Ability and skill to use instruments related to Physics  and to design and construct simple circuits to study their applications
* Appreciate the knowledge of Physics and applying it to the service of mankind.

| COURSE OUTCOMES | | | | |
|---|---|---|---|---|
| **S. No.** | **SEMESTER** | **TITLE OF THE COURSE** | **COURSE CODE** | **COURSE SPECIFIC OUTCOME** |
| 1 | **I** | Thermal Physics and Acoustics | 1MP01a | Analyze various thermodynamical functions and acoustical properties |
| 2 | | Electronics  I | 1EP01a | Analyse the characteristics of various semi-conductor devices |
| 3 | **II** | Mechanics and Properties of Matter | 2MP02a | Analyze and solve problems using principles of mechanics and properties of matter |
| 4 | | Electronics  II | 2EP02a | Analyze the significance of opto-electronic devices for various applications. Apply Boolean algebra to simplify expressions. |
| 5 | | Environmental Studies (Theory & Project) | OEST & OESPV | Develop an attitude of concern for the environment and do projects |
| 6 | | Main  Practical I | 2MPP1 | Handle simple measuring instruments and to measure certain mechanical, optical and thermal properties of matter. |
| 7 | | Elective  Practical I | 2EPP1 | Design simple circuits using logic gates and semi-conductor devices |

| | | | | |
|---|---|---|---|---|
| 8 | **III** | Electricity and Electromagnetism | 3MP03a | Analyse the electromagnetic and chemical effects of current |
| 9 | | Electronics  III | 3EP03a | Apply the principle of feedback in amplifiers and oscillators and design counters |
| 10 | | Basic Wave Mechanics (Skill Based Subject) | OBWM | Apply mathematical tools needed to solve diverse applications in basic Physics |
| 11 | **IV** | Classical and Statistical Mechanics | 4MP04 | Apply techniques from classical and statistical mechanics to simple mechanical systems |
| 12 | | Alternate Energy Resources | 4MP05b | Quantify energy demands and compare various energy resources and technologies. |
| 13 | | Electronics  IV | 4EP04a | Develop competence in analysing linear and nonlinear op-amp circuits and designing simple logic circuits. |
| 14 | | Main  Practical II | 4MPP2 | Perform experiments, present the results graphically and also interpret the results of observation |
| 15 | | Elective  Practical II | 4EPP2 | Design and test various waveform generation circuits using op-amp, comparators and IC packages |
| 16 | **V** | Optics I | 5MP06a | Design optical systems and aberration for image forming systems |
| 17 | | Relativity and Quantum Mechanics | 5MP07a | Perform basic calculations in relativistic kinematics  & Solve Schrodinger equation for various quantum mechanical systems. |
| 18 | | Atomic Physics and Crystallography | 5MP08a | Analyse crystal structure by applying crystallographic parameters & interaction of radiations with matter.  Explore atomic structure and origin of spectra. |
| 19 | | Communication Electronics | 5MP09b | Analyze basic wireless and communication circuits |
| 20 | | Mathematical  Physics | 5MP10 | Develop different  mathematical techniques to solve problems in Physics |
| 21 | | Electronics  V | 5EP05a | To analyse the architecture of 8085 microprocessor and to develop assembly language code for simple applications. |
| 22 | **VI** | Optics  II | 6MP11a | Analyse various spectroscopic techniques and  apply them for study of molecular structure. |
| 23 | | Nuclear and Particle Physics | 6MP12a | Analyse interaction of radiations with matter at nuclear level and classify elementary particles |

| 24 | | Multidisciplinary Physics | 6MP13a | Analyse the basics of astrophysics, nanophysics, medical physics and bio-physics to enable proper choice at PG level |
|---|---|---|---|---|
| 25 | | Mathematical Statistics | 6MP14 | Apply different statistical methods for a given data to get meaningful interpretation |
| 26 | | Electronics VI | 6EP06a | Develop assembly language programs for various applications using 8086 microprocessors and MASM. |
| 27 | | Main Practical III | 6MPP3 | Analyse the physical principles of various instruments and for various application. |
| 28 | | Elective Practical III | 6EPP3 | Configuring and using different peripherals in digital system |
| 29 | | Analytical reasoning level I, II and III | SARI,SAR2 & SAR3 | To enhance their quantitative aptitude, verbal and logical reasoning skills and acquire competence in them. |
| 30 | | Value education | OVE | To become responsible with moral and ethical values and be socially conscious. |