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

Programme Outcome

The PG programme in Science aims at providing indepth understanding, general competence and analytical skills on an advanced level required in the industry, consultancy ,education and research

M.Sc Physics (Programme Specific Outcome)

*To develop higher order critical thinking , analytical and problem solving skills in the areas of Classical & Statistical Mechanics, Quantum Mechanics, Materials Science, Mathematical Physics, Spectroscopy, Electronics, Nuclear & Reactor Physics .
* To motivate research through a mandatory project in the subject of interest.
*To apply advance theoretical and experimental techniques for scientific developments.

COURSE OUTCOMES				
S. No.	**SEMESTER**	**TITLE OF THE COURSE**	**COURSE CODE**	**COURSE SPECIFIC OUTCOME**
1	**I**	Classical Mechanics and Relativity	1PH01a	Solve the motion of mechanical systems using Lagrangian and Hamiltonian formulation
2		Statistical Mechanics	1PH02	Apply various Statistical distributions for macrospic systems
3		Mathematical Physics I	1PH03	Develop required mathematical skills to analyse complex problems
4		Quantum Mechanics I	1PH04a	Develop Schrodinger equation for different 1D and 3D problems and deduce corresponding wave functions
5		Electronics I	1PH05a	Elucidate and design the linear and non-linear applications of an op-amp and special application Ics.
6	**II**	Electromagnetic Theory and Plasma Physics	2PH06a	Recognize different co-ordinate systems to describe the spatial variations of the physical quantities dealt in electromagnetic field theory
7		Mathematical Physics II	2PH07a	Formulate mathematical models for further application in theoretical physics

8		Quantum Mechanics II	2PH08	Solve Schrodinger equation for simple problems using various approximation methods
9		Material Science	2PH09a	Identify unique properties of materials with respect to crystal structure for specific applications
10		Electronics II	2PH10a	Apply concepts of Microprocessor to design specific applications.
11		Practical I – General Experiments	2PHP1	Design and conduct experiments, interpret and analyze data, and report results.
12		Practical II – Electronics Experiments	2PHP2	Train their practical knowledge through laboratory experiments.
13	**III**	Nuclear and Particle Physics	3PH11a	Recognize the significance of relativistic kinematics for nuclear interactions and next generation particle accelartors for fundamental research.
14		Solid State Physics I	3PH12a	To analyse different types of crystals and its properties. Formulate the problem of electron in periodic potential and to develop a framework that explains physical properties of solids in terms of its band structure.
15		Molecular Physics and Spectroscopy I	3PH13	Apply various spectrospcopic techniques for molecular structure determination.
16		Reactor and Radiation Physics	3PH14a	Apply concepts in nuclear physics in the field of reactor design, dosimetry and radiation detection for better career opportunities.
17		Electronics III	3PH15a	Design system using memory chips and peripheral chips for 16 bit 8086 microprocessor and devise techniques for faster execution of instructions
18	**IV**	Advanced Quantum Mechanics	4PH16	Critically analyse non-relativistic and relativistic quantum field theory and draw Feymann graph for different interactions.

19		Solid state Physics II	4PH17	Elucidate the magnetic and optical properties of crystalline solids and recognise its significance in various applications of magnetism and superconductivity.
20		Molecular Physics and Spectroscopy II	4PH18	Recognise relationship between molecular spectra and molecular properties and theoretically perform NCA calculations for structural determination.
21		Computational methods and C programming	4PH19a	Identify C programming methods and establish tactics for encapsulating and hiding complexity
22		Electronics IV	4PH20a	Design electronic circuits using microcontroller 8051. Analyze audio and video signals to perform various operations in communication electronics
23		Practical III – Advanced Experiments	4PHP3a	Identify, formulate and perform advanced Physics experiments using sophisticated instruments
24		Project Work	4PHPR	To kindle interest for research in students
25		Project Viva voce	4PHPV	To enhance their confidence in presenting a scientific work and defend it suitably
26		Analytical reasoning level I, II and III	SARI,SAR 2 & SAR3	To enhance their quantitative aptitude, verbal and logical reasoning skills and acquire competence in them.