DANTULURI NARAYA RAJU COLLEGE (AUTOMOUS):: BHIMAVARAM,

WG.Dist.A.P

(A COLLEGE WITH POTENTIAL FOR EXCELLECNCE)

P.G. DEPARTMENT OF PHYSICS

M.SC PHYSICS COURSE OUTCOMES

S. No	Semester	Course Code	Title of the Course	Course Outcomes
1	SEMESTER-I	13401	Classical Mechanics	The students will be able to understand the basic concepts on Classical Mechanics. The theorems relating to the nonlinear bodies. The various aspects of dynamics and oscillations of bodies.
2		13402	Atomic and molecular physics	The students will be able to understand the basic ideas about the concepts of spectroscopy comparisons between different spectroscopic studies
3		13403	Mathematical methods of physics	The students will be able to understand the basic concepts on Mathematical sciences.
4		13404	Electronic Devices & circuits	The students will be able to understand the fundamentals of working of semiconductor and special devices applications of electronic devices
5		13405P	Electronics lab	The students can able to Measure voltage, frequency and phase of any waveform using CRO. Generate sine, square and triangular waveforms with required frequency and amplitude using function generator. Analyze the characteristics of different electronic devices such as diodes, transistors etc., and simple circuits like rectifiers, amplifiers etc.,
6	SEMESTER-II	23401	Statistical Mechanics	The students will be able to understand the fundamentals of thermodynamic systems various statistical laws governing the particles
7		23402	Electrodynamics	To study a unified surveillance of electromagnetic phenomena and be engaged to draw qualitative conclusions about them by managing a small number of physical concepts and laws. make a mathematical description of electromagnetic phenomena based on basic physical quantities through the fundamental equations of electromagnetism (Maxwell equations).Attack problems in electrodynamics through, somewhat advanced level mathematics, and resolving them through the fundamental equations . Acquire a sense of unity in physics at a fundamental level by embracing the concepts of special relativity as emerged through the laws of electrodynamics and equipped with the necessary mathematical concepts to be able to solve relative problems.
8		23403	Numerical methods and programming with C	The students will be able to understand the basic concepts of numerical methods and programming
9		23404	Nuclear & particle physics	The students will be able to understand basic concepts nucleus and its properties to gain the knowledge on elementary particles
10		23405P	Modern physics lab	
11	SEMESTER-III	33401	Introductory quantum Mechanics	The students will be able to understand basics of quantum mechanics. Various physics concepts in the light of quantum mechanics.

12		33402	Solid State Physics	The students will be able to understand the various methods involved in material characterization importance of use of different instruments for material study. To describe the different crystal structures to draw the energy bands, Brillouin zones and Fermi surface .To illustrate the theories of band structure calculations . To explain the approximations involved in the band structure methods
13		33403	Lasers & Non-linear optics	The students will be able to understand the characteristics of the laser systems. various types of laser systems. The basic concepts about the Non linear optics The importance of use of non linear optics materials in applications.
14		33404	Digital Electronics & Microprocessors	The students will be able to understand The working of digital electronic devices. The concepts of working model of microprocessors and microcontroller
15		33405P	Solid state physics lab/ Digital(Including Microprocessor)& Communication Electronics Lab	Students will be able to contrast and compare digital representation of information with the analog representation. To explain fundamental concepts of the decimal number system. Represent number systems in powers of the base. To understand the basic electronics of logic circuits and be able to use integrated circuit packages. To model, analyze, and test a digital circuit using a computer software application
16	SEMEST ER-IV	43401	Advanced Quantum Mechanics	To understand Scattering by square-well potential, effective range. Resonance scattering. Born Approximation, Validity of Born Approximation. Klein-Gordan equation, Probability and current density, Inadequacies of Klein-Gordan equation. Dirac matrices, Dirac relativistic equation for free particles and solution. Concept of negative energy states. Theory of holes.
17		43402	Properties & Characterization of Materials	To understand The Lattice Vacancies, Diffusion, Color Centers—F Centers, other centers in alkali halides, Alloys, Order-disorder transformations, Elementary theory of Order. Fundamentals of Infra-red Spectroscopy and Applications : Fundamentals of Transmission electron microscopy and scanning electron microscopy, study of crystal structure using TEM, study of microstructure using SEM.
18		43403	Communication electronics	The students will be able to understand the concept of the communication
19		43404	Antenna theory & Radio Wave propagation	To understand the concept of Electromagnetic wave propagation in different scenarios. The role of antennas in communication systems. Antenna parameters and an appropriate selection of antennas suitable to the application at hand. Antenna system analysis. Antenna arrays analysis and design Microwave antennas and their applications.
20		43405P	Solid state physics lab	To Study of the normal modes of vibrations of coupled pendulum, strength of the coupling constant and exchange energy. Measurement of Magneto resistance of Semiconductors. Study of Magnetic Hysteresis loops of ferromagnetic materials. Study of Phonon Dispersion characteristics. Determination of Hall co-efficient and estimation of charge carrier concentration and mobility.