



SACRED HEART COLLEGE (AUTONOMOUS)

Tirupattur – 635 601, Tamil Nadu, S.India

Resi : (04179) 220103

College : (04179) 220553

Fax : (04179) 226423

Ready for
Every Good Work

A Don Bosco Institution of Higher Education, Founded in 1951 * Affiliated to Thiruvalluvar University, Vellore * Autonomous since 1987

Accredited by NAAC (4th Cycle – under RAF) with CGPA of 3.31 / 4 at 'A+' Grade

Name of the Course	Course Code	Name of the Program	Activities with direct bearing on Employability/ Entrepreneurship/ Skill development	Year of introduction
Waves and Oscillations	P213	B. Sc. Physics	Skill development: Contents: Waves, Wave Motion, Stationary waves, Interference of sound waves, Harmonic Oscillations and Lissajous' figures, Vibrations. Activities: Illustrative discussions on SHO, Assignments on Interference of waves and its Demonstration, Students can solve different types of problems. They are also well equipped to tackle open ended problem	2021-22
Physics Main Practicals – I	PP207	B. Sc. Physics	Skill development: Experiments in Fundamental Physics Activities: Hands-on-training, Demonstration,	2021-22

			Discussion, Record writing, Experimental learning, Interpretation of Graphs and Results.	
Electricity and Magnetism	P314	B. Sc. Physics	<p>Skill development:</p> <p>Contents: Electric field of continuous charge distributions- Experimental tests of Gauss's law and Coulomb's law- Calculating the potential from the field- Calculating the capacitance - Carey foster's bridge, theory, measurement of resistance and temperature coefficient of resistance of a coil</p> <p>Activities: Demonstrative interactions on determination of Hall Effect, Demonstrations on Applications of Electromagnetic waves, Problem solving on Gauss's law, Assignments on moving coil ballistic galvanometer, Langevin's theory of dia magnetism and para magnetism.</p>	2021-22

Physics Main Practicals – II	PP413	B. Sc. Physics	Skill development: Contents: 100% (All Experiments in the syllabus) Activities: Investigation by demonstration, Hands on learning, Record Writing, Interpretation of concepts, Results and error analysis, Graphical presentation.	2021-22
Classical Mechanics and Statistical Physics	P541	B. Sc. Physics	Skill Development: Contents: 100 % Activities: Discussions on lagrangian formulation and Hamiltonian formulations and its applications, Problems in Rigid body dynamics, classical thermodynamics and quantum statistics.	2021-22
Semiconductor devices and their Applications	P542	B. Sc. Physics	Skill development: Contents: Efficiency of rectifiers to convert AC into DC - Analysis of Multistage stage RC coupled amplifier- Audio Power amplifiers - Classification - transformer coupled - class A power amplifier - Generation of sine waves using a	2021-22

			Colpitts and Wien bridge oscillators - positive feedback amplifiers as an oscillator- Practical inverting OP-AMP, Non inverting OP-AMP - Activities: Demonstrations on Oscillators, E-Assignment on types of Amplifiers, Seminars. E-Quiz	
Programming in C	P546A	B. Sc. Physics	Skill development: Contents: Simple programs using arrays: Addition of two matrices - subtraction of two matrices – Multiplication of two matrices - ascending and descending order. Activities: Writing programs using ‘C’ coding, Hands-on experience in easy methods of carrying out numerical analysis using C language with applications to physical problems.	2021-22
8085 Microprocessor and its Applications	P546B	B. Sc. Physics	Skill development: Contents: Number System, Fundamentals of Microcomputer, Instruction set of 8085, Interfacing Memory to 8085, Interfacing I/O Devices and	2021-22

			<p>Programming.</p> <p>Activities: Writing assembly programs, interfacing of memory and I/O devices. Problem solving skills: Number System and Fundamentals of Microcomputer.</p> <p>Activities: Conversion of given numbers from one system to another system.</p>	
Repair and Maintenance of Household Appliances	NPH504	B. Sc. Physics	<p>Skill development:</p> <p>Contents: Principles and working of home appliances, Repairing and Maintenance of home appliances.</p> <p>Activities: Hands-on-training to test the continuity of electrical lines with Multimeter, Quiz on safety precautions, Brain storming investigations on basic concepts of home appliances, E-Assignments on electric iron box, ceiling fan and fluorescent lamp, Interactive session on assemble, dismantle, reassemble and installation of home appliances.</p>	2021-22

Quantum Mechanics and Relativity	P639	B. Sc. Physics	Skill Development: Contents: 100% Activities: Virtual Interactive Illustrations of QM and relativistic Concepts.	2021-22
Physics Main Practicals – III (General experiments)	PP617	B. Sc. Physics	Skill development: Content: 100% Activities: Hands on training on different Physics concepts and theories.	2021-22
Physics Main Practicals – IV (Electronic experiments)	PP618	B. Sc. Physics	Skill development: Contents: Designing Half subtractor and Full subtractor, Designing R–S, J–K, and D–Flip Flops using NAND gates, Simplification of Boolean expression using Karnaugh map (NAND- NAND Logic), Studying the operation of Multiplexer and Demultiplexer, studying the performance of Single stage common emitter transistor amplifier, Designing and studying the operation of Oscillators, Designing amplifiers, Summer, Subtractor, Differentiator and Integrator using Op-	2021-22

			amp, Writing and simple programs using Microprocessor 8085 etc. Doing these experiments with understanding may help the students to acquire laboratory skills such as designing, identifying, locating and rectifying faults in electronic circuits. Activities: Hands on training on designing, fault finding, rectifying and analyzing the operation of electronic circuits, Seminars and Group discussions.	
Electrical circuits and Networks (Theory & Practical)	P640S	B. Sc. Physics	Skill development: Content: 100% content Activities: Discussion, Demonstration, Hands on training, animation, fault finding, testing	2021-22
Basic Instrumentation (Theory & Practical)	P641S	B. Sc. Physics	Skill development (100%): Content: Analog Electrical Instruments, Digital Instruments, Optical instruments and Environmental Instruments Activity: Demonstrations, Seminars,	2021-22

			Assignments and MCQs	
Physics in Everyday life	NPH604	B. Sc. Physics	Skill development: Contents: Physics principles and heavenly bodies Activities: Simple demonstrations to understand the application of physics principles to real life situations, Quiz on Astrophysics, Brain Storming on solar systems, Interactive sessions on heavenly bodies, Assignments and Seminars on application of physics principles.	2021-22