

SCIENCE

1. PHYSICS

I PU

The syllabus includes scalars and vectors, units and dimensions, motion in one dimension, Newton's laws of motion, friction, motion in two and three dimensions, work, power, energy, rotational motion and rigid body dynamics, gravitation, elasticity, concurrent coplanar force, moment of force, fluid thrust, fluid dynamics, surface tension, viscosity, gas laws, specific heat, capacity of gases, mode of heat transfer, thermodynamics, oscillations, waves, sound, stationary waves, acoustics of buildings, earth's atmosphere and astrophysics.

II PU

The syllabus covers topics like refraction at a plane surface, through prism and at spherical surface, introduction to theories of light. Interference, diffraction, polarization, speed of light, electric charges, field, capacitors, current, Kirchoff's laws, magnetic and mechanical effects of electric current, EMI, introduction to atomic physics, photoelectric effect, dual nature, Bohr's atom model, scattering, LASERS, nuclear physics, radioactivity, elementary particles, solid state electronics, digital electronics and soft condensed matter.

Learning outcome -

The purpose of II year PU course in physics is to provide a strong base for the students, which will enable them to pursue further career in basic sciences or professional courses. The II year physics curriculum helps the learner to strengthen the concept developed at the school level. It gives primary importance to acquiring knowledge, understanding and application abilities about different aspects of physics. Physics is a basic science subject involved with virtually higher levels of science. By taking up physics, it enables the students to opt for either professional courses or basic sciences. Physics is the fundamental requirement for various engineering courses and also for various prestigious Research & Development establishments like ISRO, DRDO, etc. All the major developments in the field of scientific research are involved with physics.

2. CHEMISTRY

I PU

The major topics are atomic structure, periodic properties; S and P block elements, oxidation number, metallurgy, chemical bonding, stoichiometry, states of matter, thermo dynamics, chemical equilibrium, surface chemistry and organic chemistry-hydro-carbons, alcohols and ethers.

II PU

The topics included are thermodynamics, chemical kinetics, electrochemistry, chemical bonding, colloids, solids, co-ordination compounds, dilute solutions, metallurgy, noble gases, d-block elements, industrially important compounds, organic chemistry and biochemistry.

Learning outcome -

The syllabus enables the students to appreciate the intricacies of science at atomic and molecular levels. The discipline opens new vistas with field of biotechnology and nanotechnology, thereby making the students to learn science through an integrated approach.

3. MATHEMATICS

I PU

The first year syllabus aims at imparting fundamentals of algebra, trigonometry, analytical geometry, calculus and graph theory. Algebra includes partial fractions, logarithms, mathematical induction, summation of series, theory of equations, binomial theorem, mathematical logic, sets, relations and functions. Trigonometry consists of measurement of angles, trigonometric functions, standard angles, allied angles, compound angles, multiple and sub multiple angles, transformation formulae and solution of triangles. Analytical geometry comprises co-ordinate system, straight lines and pair of straight lines. In calculus, we have limit and continuity.

II PU

The second PU syllabus builds on the fundamental concepts learnt by the students in the first year. The syllabus consists of algebra, analytical geometry, trigonometry and calculus. In algebra, we have elements of number theory, congruence, matrices, determinants, groups and vectors. Analytical geometry deals with circles and conic sections. In trigonometry, the lessons are inverse trigonometric functions, general solutions of trigonometric equations and complex numbers. Differentiation, application of derivatives, integration, definite integral and their applications and differential equations are the topics under calculus.

Learning outcome -

The two year PU course enables the students to acquire knowledge of terms, symbols, formulae, definitions, concepts and principles of mathematics. It helps them in developing the ability of reasoning and critical thinking to apply it in day to day life. It exposes students to various methods of solving problems and to select the most appropriate, effective and efficient method. Assignments and projects inculcate independent thinking in solving mathematical problems.

4. BIOLOGY

I PU

The syllabus in Botany includes biosystematics and cell biology. Under general biology some specific topics in botany are diversity of life on earth, plant taxonomy, economic botany and plant pathology. Syllabus in zoology includes biomolecules, origin of life and organic evolution under general biology. Some topics in zoology include diversity of animal life, animal type study and animal resources

II PU

The syllabus in botany includes molecular biology, biotechnology, plant water relations, bioenergetics (photosynthesis and respiration) and growth. Syllabus in zoology includes immunology, homeostasis biodiversity, physiology and developmental biology.

Learning outcome -

Introducing topics like biotechnology, molecular biology, genetics and teaching all these topics through various innovative methodologies prepares a student with lot of confidence and inquisitiveness to pursue and share their career in Research & Development field of life sciences. Study of topics like human physiology, embryology and immunology makes them more ambitious to pursue their career in the field of medical science, again learning of plant physiology, histology and anatomy propels them to pursue their research in the field of agricultural science and make valuable contributions to the society. Their positive change in interest and their curiosity and enthusiasm displayed during exhibition and

other events is a testimony to contentment and happiness. Study of biology at PU level helps the students to understand the environment, life system and associated factors more clearly and enables them to live in perfect harmony with nature and its resources.

5. ELECTRONICS

I PU

During the first year, the students are introduced to electronics, principles of electricity, passive electronic components, application of A.C & D.C to passive components, semiconductor and diode, measuring instruments and introduction to digital electronics.

II PU

The syllabus comprises of bipolar junction transistors, transistor amplifiers, feed back in amplifiers, operational amplifiers, oscillators, communication, modulation and demodulation, digital electronics and modern communication system.

Learning outcome -

The two year PU electronics is definitely very beneficial especially to students pursuing engineering they will have the knowledge of the subject fundamentals. Computer assembling and trouble shooting course is organized to keep pace with the fast changing technological world. We motivate our students to take up projects to develop confidence and presentation skills and enhance the knowledge base of our students. They get to know the art of trouble shooting by having hands on experience on the circuits.