Diploma in Science - Standard

Subject Description

**Tertiary Study Skills**
This non-award subject is designed to introduce students to academic writing conventions, provide knowledge of different academic genres, taking lecture notes, exam preparation methods, effective study techniques and organisational skills.

**Chemistry**
This subject examines conventional notation and terminology used in chemistry, with a focus on developing practical and problem-solving skills that will be used in areas such as atomic structure, the periodic table, chemical bonding, reactions of substances, chemical energy and organic chemistry.

**Mathematics**
The study of basic arithmetic and algebra involving surds, inequalities, absolute values and functions, calculus, trigonometry and trigonometric functions is undertaken.

**Biodiversity**
This unit demonstrates the diversity of living organisms and viruses, with particular emphasis on those that affect human health.

**Biometry**
Topics include effective methods of gathering data, statistical principles of designing experiments, error analysis, describing different sets of data, probability distributions, statistical inference, non-parametric methods, and simple linear regression and correlation.

**Cell Biology**
This unit covers cell replication, sex cell formation, Mendelian genetics as well as cellular respiration and DNA replication, transcription and translation. The role of DNA technology in biomolecular science will be an important component of the unit and will unify the several topics listed above.

**Chemistry 1**
This subject focuses on scientific notation, nomenclature, chemical equations, stoichiometry, the mole concept, atomic structure, periodicity, electronic configuration, structure and bonding, states of matter, intermolecular forces, properties of solutions, chemical thermodynamics, chemical equilibria, and electrochemistry.

**Chemistry 2**
This subject continues to develop student understanding of basic chemistry principles, with emphasis on the chemistry of carbon compounds. It focuses on introductory chemical dynamics, together with an in-depth treatment of the structure, nomenclature and reactivity of the principal organic functional groups.
**Information Systems in Context**
Gives students the ability to recognise and expound about business information systems with regards to type, function and purpose, and frameworks within which these systems are used.

**Physics 1**
Topics covered include systems of units, introductory mechanics, Newton's laws, work, conservation of energy and momentum, electricity, electrostatics, DC and AC circuits and components, introductory electromagnetism, waves and optics, electromagnetic radiation, reflection, refraction, image formation, polarisation, interference and diffraction.

**Professional Skills for Science**
This unit allows students to learn, develop and use various academic and interpersonal methodologies within the wider context of applied scientific principles. Activities encourage development of self-confidence, creative thinking, problem solving, group process, communication and peer support.