

Foundation Certificate in Science

Module Outlines

English as a Second Language (Count-in Speaking)

In this module, students will be presented with a variety of stimuli that will build up their skills in reading and writing. They will learn to select relevant details, understand the difference between what is directly stated and implied, and practise writing for different purposes and audiences. Students will listen to a range of spoken material, including talks and conversations, to develop listening skills. Students will engage in conversations on a variety of topics and develop their skills in responding to different situations and audiences with a degree of accuracy and clarity.

Foundation in Biological Science

The module aims to instil fundamental concepts of cell and tissue function across species, which is a cornerstone of the life sciences. One central feature of biology is that cells possess both conserved processes and unique mechanisms that are crucial for proper cell function and viability. As such, an in-depth comparison of core molecular processes across cell types, as well as an understanding of how these mechanisms contribute to a biological system, is a vital component to the understanding of cell biology.

Foundation in Cell Biology

The module aims to instil the fundamental concepts that allow complex organisms to function, with some focus on the human body and other higher organisms. Key concepts include basic cellular transport and signalling mechanisms, neuronal structure & function, motor mechanisms & locomotion, circulation and gas exchange, and the endocrine system. This module also examines the integration between physical processes at the molecular level and phenotypic level, and identifies how cellular, genetic, and evolutionary processes affect everyday life.

Foundation in General Chemistry

The module aims to decipher fundamental concepts and organizing principles of chemistry that provide the foundation for many aspects of chemical science and related fields. It aims to bring the students in science to the same level of command of basic chemistry that is essential to progress to advanced courses. The concepts espoused in the course will be illustrated and connected with real world applications whenever relevant.

Chemistry for Life Science

The module aims to instil fundamental concepts and organizing principles of chemistry that provide the foundation for many aspects of chemical science and related fields. It aims to bring the students in science to the same level of command of basic chemistry that is essential to progress to advanced courses. The concepts espoused in the course will be illustrated and connected with real world applications whenever relevant. The e-laboratory component of this course aims to expose students to specific experiments which will help them gain familiarity with a variety of skills, laboratory techniques and equipment.

Mathematics

The module supports students in building competency, confidence and fluency in their use of techniques and mathematical understanding. This module helps students to develop a feel for quantity, patterns and relationships. Students will develop their reasoning, problem solving and analytical skills in a variety of abstract and real-life contexts.