



IB Diploma Options 2016

Experimental Sciences

An experimental science is an essential part of the IB Diploma and one of the following options must be selected in Group 4, an additional option can be selected in Group 6:

Biology

Biology enables students to gain a greater understanding of the world around them and what makes an organism the way that it is. Studying the relationships between organisms within and across species through: genetics, biological molecules, ecosystems, energy transfers, evolution, plant biology and physiology students will explore the processes of life. Biology is an essential choice for potential university students in Medicine, Veterinary Science, Physiotherapy, Food Security and Metabolomics.

Chemistry

Chemistry attempts to understand how and why materials behave the way they do, which in turn allows us to control our environment and create new materials for our increasingly technological society. Theoretical study, combined with the acquisition of practical and investigative skills, is employed to reveal the laws that underpin both the physical universe and biological systems. Chemistry is essential for many other courses in higher education such as Medicine, Veterinary Science, Pharmacology, Biochemistry, Molecular Biology and Forensic, Food & Environmental Sciences.

Environmental Systems and Societies

ESS provides students with a coherent perspective of the interrelationships between environmental systems and societies; one that enables them to adopt an informed personal response to the wide range of pressing environmental issues. The teaching approach is conducive to students evaluating the scientific, ethical and socio-political aspects of issues and combines theoretical study with practical investigations and field work. It is an essential choice for students wishing to study Environmental Engineering, Ecotourism, Ecology or other environmentally related courses.

Physics

Through the IB Physics course students will gain a deeper understanding of the physical world, seek to explain the Universe and all that it contains. The course content ranges from the macroscopic concepts governed by Newtonian mechanics to the unseen interactions involved in topics such as thermal, quantum and nuclear physics. Engaging in a physics course will help to develop your analytic problem solving skills which can open up a number of careers not necessarily related to the subject itself and is a desirable subject choice for careers such as Mechanical and Sound Engineering, Law and Computing.



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Sports, Exercise and Health

The course in sports, exercise and health science involves the study of the science that underpins physical performance and provides the opportunity to apply these principles. The course incorporates the traditional disciplines of anatomy and physiology, biomechanics, psychology and nutrition studied in the context of sport, exercise and health, with a range of practical (experimental) investigations in both laboratory and field settings in core and option topics. Where relevant, the course will address issues of international dimension and ethics by considering sport, exercise and health relative to the individual, and in a global context. The sports, exercise and health science course is offered at standard level only and supports careers in sports science, physiotherapy, psychology and sports coaching and teaching.

Sports, Exercise & Health Science is offered at both Standard and Higher Level. HL students will study the same units as the SL course but will go into greater breadth and depth within the topic area.

Computer Science

Computer science students should become aware of how computer scientists work and communicate with each other and with other stakeholders in the successful development and implementation of IT solutions. Computer science requires an understanding of the fundamental concepts of computational thinking as well as knowledge of how computers and other digital devices operate. The course draws on a wide spectrum of knowledge to underpin computational thinking to develop algorithms and appreciate how theoretical and practical limitations affect the extent to which problems can be solved computationally using a range of programming languages. Computer science is a desirable course for students wishing to pursue careers in fields such as software engineering, systems analysis and network architecture.

Computer science has links with subjects outside of group 4, notably mathematics and information technology in a global society (ITGS), but it should be noted that there are clear differences between the subjects.

Assessment in Experimental Science

Students are required to complete summative assessment at the end of two years; this includes three examination papers and internal assessment. The internal assessment is the same for both SL and HL and enables students to apply their skills and knowledge, to pursue their personal interests without the time limitations and other constraints that are associated with written examinations. The internal assessment should, as far as possible, be woven into normal classroom teaching and not be a separate activity conducted after a course has been taught.