

BIOLOGY - COURSE DESCRIPTION

Biology as a subject belongs to the Group 4 of the Diploma Programme. The subject is taught 4 lessons per week (SL) or 6 lessons per week (HL) in two years. The IB Diploma Programme biology course combines academic study with the acquisition of practical and investigational skills through the experimental approach.

The syllabus for the Diploma Programme Standard level Biology course is divided into 2 parts;

- **Core material** - the Core material is compulsory and is divided into 6 topics: Cells biology, Molecular biology, Genetics, Ecology, Evolution and biodiversity and Human physiology
- **Options** - the Optional Material usually consists of one of the following topics: Neurobiology and Behaviour, Human Physiology, Ecology and conservation

The syllabus for the Diploma Programme Higher level Biology course is divided into 3 parts;

- **Core material**
- **Additional higher level** – it is divided into 5 topics: Nucleic acids, Metabolism, cell respiration and photosynthesis, Plant biology, Genetics and evolution and Animal physiology
- **Options.** The Optional Material consists of one of the following topics: Neurobiology and behaviour, Human physiology and Ecology and conservation

GOAL

Students learn the biological principles that underpin both the physical environment and biological systems through the study of molecular biology, cells, genetics evolution, ecology and human physiology. The biology course covers the essential principles of the subject and, through selection of options, allows teachers some flexibility to tailor the course to meet the needs of their students. Throughout this challenging course, students become aware of how scientists work and communicate with each other. Further, students enjoy multiple opportunities for scientific study and creative inquiry within a global context. In addition, the course is designed to:

- provide opportunities for scientific study and creativity within a global context that will stimulate challenge students
- provide a body of knowledge, methods and techniques that characterize science and technology
- enable students to apply and use a body of knowledge, methods and techniques that characterize science and technology
- develop an ability to analyse, evaluate and synthesize scientific information
- develop experimental and investigative scientific skills
- raise an awareness of the need for and the value of, effective collaboration and communication during scientific activities

- develop and apply the students' information and communication technology skills in the study of science
- raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology
- develop an appreciation of the possibilities and limitations associated with science and scientists
- encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

ASSESSMENT

Assessment is an integral part of teaching and learning. The most important aims of assessment in the Diploma Programme are that it should support curricular goals and encourage appropriate student learning. There are two types of assessment identified by the IB.

- **Formative assessment** is concerned with providing accurate and helpful feedback to students and teachers on the kind of learning taking place and the nature of students' strengths and weaknesses in order to help develop students' understanding and capabilities. It can also help to improve teaching quality, as it can provide information to monitor progress towards meeting the course aims and objectives.
- **Summative assessment** gives an overview of previous learning and is concerned with measuring student achievement.

The student's official assessment consists of two parts:

- **the External Assessment** (three written papers) - IB examiners mark work produced for external assessment
- **the Internal Assessment** (experimental individual investigations and Group 4 Project) - work produced for internal assessment is marked by teachers and externally moderated by the IB. During two year course, students are also assessed internally through quizzes, tests and exams.

It is the intention of this course that students are able to fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of:

- facts, concepts, and terminology
- methodologies and techniques
- communicating scientific information.

2. Apply:

- facts, concepts, and terminology
- methodologies and techniques
- methods of communicating scientific information.

3. Formulate, analyse and evaluate:

- hypotheses, research questions and predictions
- methodologies and techniques
- primary and secondary data
- scientific explanations.

4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

Final grade

The official final grade for the Biology module consists 80% of the External Assessment grade and 20% of the Internal Assessment. The external assessment consists of three written papers.

Component	Overall weighting (%)	Duration (hours)
	SL / HL	SL / HL
Paper 1	20 / 20	$\frac{3}{4}$ / 1
Paper 2	40 / 36	1 $\frac{1}{4}$ / 2 $\frac{1}{4}$
Paper 3	20 / 24	1 / 1 $\frac{1}{4}$
Internal assessment	20 / 20	10 / 10