



XV. GIMNAZIJA

International Baccalaureate Department

Diploma Programme

Biology



Course description 2019/2020

Biology as a subject belongs to the Group 4 of the Diploma Programme. The subject is taught 4 lessons per week (for Standard level) or 5 lessons per week (for Higher level) 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 and Options. The Core material is compulsory and is divided into topics: cells biology, molecular biology, genetics, ecology, evolution and biodiversity, human physiology

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 and Options. The Optional Material consists of one of the following topics: Neurobiology and behaviour (HL), Human physiology (SL)

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

The student's official assessment consists of the External Assessment (three written papers) and the Internal Assessment (experimental individual investigations and Group 4 Project). During two year course, students are also assessed internally through quizzes, tests, term-, mock-, and year-exams.

Assessment objectives

The assessment objectives reflect those parts of the aims that will be formally assessed either internally or externally. These assessments will centre upon the nature of science. It is the intention of these courses that students are able to fulfil the following assessment objectives:

1. Demonstrate knowledge and understanding of:
 - a. facts, concepts, and terminology
 - b. methodologies and techniques
 - c. communicating scientific information.
2. Apply:
 - a. facts, concepts, and terminology
 - b. methodologies and techniques
 - c. methods of communicating scientific information.
3. Formulate, analyse and evaluate:
 - a. hypotheses, research questions and predictions
 - b. methodologies and techniques
 - c. primary and secondary data
 - d. scientific explanations.

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

GRADING CRITERIA for Group 4 (Biology) Subjects

1. Criterion: Knowledge & Understanding:
 - Assessment (written or oral) of student's knowledge at the end of each small unit (or subunits in case of extensive units); 2-4 grades per semester depending on the semester and level of the subject,
 - written exams are announced 1 week in advance,
 - student can be orally examined without previous announcement;
2. Criterion: Engagement:
 - Assessment of the student's improvement and engagement through:
 - o Unannounced short exams or quizzes (up to 10-min exams; formative assessment will be recorded in the notes of the class book and for each 2 to 3 quizzes one mark will be averaged),
 - o homework check-up and participation during class (marks will be recorded in the notes of the class book and will be averaged once per semester),
3. Criterion: Practical work:
 - Selected Lab reports will be graded (depending on the Lab's complexity 1-2 Lab reports will be averaged. Approx. 2 grades per semester from this criterion),
 - **Lab reports should be submitted in paper form (no USB...) to the subject teacher on time! Lab reports should also be uploaded on Turnitin by teachers request**
 - In case student hasn't submitted Lab report on time, student can get negative participation mark. Student can submit the missing Lab report on the very next day to correct the negative mark (negative grade and the grade obtained from the Lab report are averaged),
 - If a student hasn't submitted all Lab reports by the end of semester/year grade cannot be awarded,
4. Criterion: Semester exam:
 - at the end of each semester students have their end of semester exam(Mock) which is composed of Paper 1 and Paper 2 (at the end of 2nd semester in 12th grade students have 3 papers on mocks),
 - 2 marks (3 in 12th grade) are entered into blue-book and averaged with all other class marks to produce the final mark. Approximate weightiness of these marks is 20%.

Final grade at the end of the school year doesn't have to be the same as the average class grade

Standard level External Assessment

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 (%)	Approximate weighting of objectives (%)		Duration (hours) SL//HL
		1+2	3	
Paper 1	20	10	10	$\frac{3}{4}$ // 1
Paper 2	40	20	20	$1\frac{1}{4}$ // $2\frac{1}{4}$
Paper 3	20	10	10	1 // 1, $\frac{1}{4}$
Internal assessment	20	Covers objectives 1, 2, 3 and 4		10

External assessment details—SL

External Assessment Specifications for STANDARD level					
Component	Duration	Points	Overall weighing	Format	Syllabus Coverage
Paper 1	45 min	30	20%	<ul style="list-style-type: none"> 30 multiple-choice questions on core, about 15 of which are common with HL. The questions on paper 1 test assessment objectives 1, 2 and 3. The use of calculators is not permitted. Students will be provided with a periodic table. No marks are deducted for incorrect answers. 	Core
Paper 2	1 h & 15 min	50	40%	<ul style="list-style-type: none"> Short-answer and extended-response questions on core material. The questions on paper 2 test assessment objectives 1, 2 and 3. The use of calculators is permitted. (See calculator section on the OCC.) 	Core
Paper 3	1 h	35	20%	<ul style="list-style-type: none"> This paper will have questions on core and SL option material. Section A: one data-based question and several short-answer questions on experimental work. Section B: short-answer and extended-response questions from one option. The questions on paper 3 test assessment objectives 1, 2 and 3. The use of calculators is permitted. (See calculator section on the OCC.) 	Experimental work Option

External assessment details—HL

External Assessment Specifications for HIGHER level					
Component	Duration	Points	Overall weighing	Format	Syllabus Coverage
Paper 1	1h	40	20%	<ul style="list-style-type: none"> 30 multiple-choice questions on core, about 15 of which are common with HL. The questions on paper 1 test assessment objectives 1, 2 and 3. The use of calculators is not permitted. Students will be provided with a periodic table. No marks are deducted for incorrect answers. 	Core +AHL
Paper 2	2 h & 15 min	72	40%	<ul style="list-style-type: none"> Short-answer and extended-response questions on core material. The questions on paper 2 test assessment objectives 1, 2 and 3. The use of calculators is permitted. (See calculator section on the OCC.) 	Core+AHL
Paper 3	1h & 15 min	45	20%	<ul style="list-style-type: none"> This paper will have questions on core and SL option material. Section A: one data-based question and several short-answer questions on experimental work. Section B: short-answer and extended-response questions from one option. The questions on paper 3 test assessment objectives 1, 2 and 3. The use of calculators is permitted. (See calculator section on the OCC.) 	Experimental work Option

School Internal Assessment

Students are assessed internally in our school throughout the two years of the IB programme. The assessment aims to the continuous supervision of a student's progress by a wide range of assessment tools. There will be a comprehensive test at the end of each chapter. This test will consist of two parts: the first part being multiple choice questions and the second part consisting of data analysis and/or short answer questions.

All tests and exams will be graded according to the grade boundaries provided.

Grade	Grade boundaries	
	Tests and exam Paper 1	Exam paper 2 and 3
7	91-100%	86-100%
6	81-90%	71-86%
5	71-80%	55-70%
4	61-70%	45-54%
3	51-60%	31-44%
2	31-50%	15-30%
1	0-30%	0-14%

Term Grades and Final grade will be determined according to the table below.

Semester	Component				
1st, 2nd and 3rd Semester	Paper 1	Paper 2	Paper 3	Knowledge & understanding , class engagement	Internal assessment (lab reports)
	10%	10%	/	55%	25%
4th Semester	5%	30%	10%	30%	25%