

# IB Biology- Standard Level

11<sup>th</sup> Grade [3 periods *per week, year-round*]

Ms. Sally-Anne Ganley

## Course Description

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IB Biology is a lab-based course of instruction designed to prepare students for the study of biological sciences at the university level. The topics covered include

Cell biology

Molecular biology

Genetics

Ecology

Evolution and biodiversity

Human physiology

Plus one optional topic (one of Neurobiology and behavior, Biotechnology and bioinformatics, Ecology and conservation, or Human physiology)

In addition to these course topics, students must complete an Internal Assessment which is an investigation that is designed and conducted by the individual student.

Skills emphasized (From the Biology Guide p. 22):

“Integral to the experience of students in any of the group 4 courses is their experience in the classroom, laboratory or in the field. Practical activities allow students to interact directly with natural phenomena and secondary data sources. These experiences provide the students with the opportunity to design investigations, collect data, develop manipulative skills, analyse results, collaborate with peers and evaluate and communicate their findings....By providing students with the opportunity for hands-on experimentation, they are carrying out some of the same processes that scientists undertake...It is important that students are involved in an inquiry-based practical programme that allows for the development of scientific inquiry. It is not enough for students just to be able to follow directions and to simply replicate a given experimental procedure; they must be provided with the opportunities for genuine inquiry. Developing scientific inquiry skills will give students the ability to construct an explanation based on reliable evidence and logical reasoning. Once developed, these higher-order thinking skills will enable students to be lifelong learners and scientifically literate.”

## Timeline

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The first five topics are covered in units during the first year and the internal assessment (for grade 11). The final topic and the option are completed in the second year (plus the internal assessment for grade 12), with time remaining for review and practice before the IB exam. Each unit includes laboratory investigations that are required by the IB and that are designed to enhance the understanding of the topic as well as build lab skills.