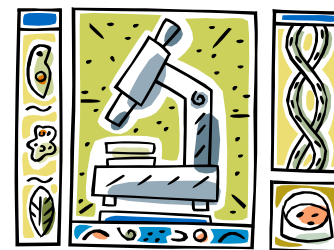


International Baccalaureate Biology Syllabus
August 2023 – May 2024



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TEXT:

Pearson Baccalaureate Higher Level Biology (2nd Edition)

DESCRIPTION:

Students in IB biology will develop a conceptual framework for modern biology to help them gain an appreciation of science as a process. Essential to this understanding is the following: a grasp of science as a process rather than an accumulation of facts; personal experience in scientific inquiry; recognition of unifying themes that integrate the major topics of biology; and an application of biological and critical thinking to environmental and social concerns. There are four basic biological concepts that run throughout the course: structure and function, universality versus diversity, equilibrium within systems, and evolution.

AIMS:

Through studying IB level biology, students should become aware of how scientists work and communicate with each other. While the “scientific method” may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterizes and distinguishes IB biology from other disciplines.

OBJECTIVES:

It is the intention of the IB experimental biology course, that all students achieve the following objectives:

- 1) Demonstrate an understanding of: scientific facts, concepts, techniques, terminology, methods of presenting scientific information and the scientific method.
- 2) Apply and use: scientific facts, concepts, techniques, terminology, appropriate methods to present scientific information and the scientific methods.
- 3) Construct, analyze and evaluate: hypotheses, research questions, predictions, scientific methods and techniques, and scientific explanations.
- 4) Demonstrate the personal skills of cooperation, perseverance and responsibility appropriate for effective scientific investigations and problem solving.
- 5) Demonstrate the manipulative skills necessary to carry out scientific investigations with precision and safety.

Course Outline:

The following topics will be covered. IB/Diploma Program topics and objectives correspond to the IB/Diploma Program Curriculum Guide.

CORE:

Topic 1: **Statistical Analysis/Experimental Design**
Topic 2: **Cells and Cell Processes**
Topic 3: **Molecular Biology/Biochemistry**
Topic 4: **Nucleic Acids and Genetics**
Topic 5: **Genetic Modification/Biotechnology**
Topic 6: **Evolution and Biodiversity**
Topic 7: **Ecology**

Topic 8: **Cellular Respiration/Photosynthesis**
Topic 9: **Plant Biology**
Topic 10: **Human and Animal Physiology**
Topic 11: **TBD Additional HL Unit**
Topic 12: **IA Investigation**

The instructor retains the right to vary this syllabus due to school schedule changes or as the instructor deems necessary due to circumstances.

IB ASSESSMENT:

Written Examination (external assessment): The final examination for DP students will be on Wednesday, May 17, 2023 and Thursday, May 18, 2023.

Paper 1 - 40 multiple choice questions on every topic **EXCEPT** the additional HL topic. No calculators allowed. This paper lasts 1 hour.

Paper 2 - Section A consists of Data - Based Questions (**DBQs**) with multiple parts, sometimes short answer or statement answer questions. Section B consists of 2 Extended Response questions (you choose 2 out of 3). Each of these questions has multiple parts. Calculators are allowed. These questions can be on every topic **EXCEPT** the additional HL topic. This paper lasts 2 hours and 15 minutes.

Paper 3 - Section A consists of **DBQs** and lab - based questions based on required IB lab skills. Section B consists of **DBQs** and short answer questions based **ONLY** on the additional HL curriculum. This paper lasts 1 hour and 15 minutes.

Internal Assessment

Group 4 Project:

The Group 4 Project is a cooperative activity in which each IB Biology student must participate. The emphasis in this project is the collaborative effort and experience rather than the results of the experiment. Students will work in groups of 3 or 4 to complete an originally - designed experiment, document the experiment process, and complete a formal lab report.

This project must be completed by **January 13, 2023 (date is tentative)**.

Laboratory Work (Internal Assessment): All students will participate in laboratory work throughout the course. Students will complete an IA of their design that will be evaluated by the instructor and possibly submitted to IB evaluators.

Internal assessment is an integral component of IB Biology, contributing 20% of the final assessment in the course. It is recommended that at least 10 hours be dedicated to the completion of the IA.

Your IA will count as your final exam for each semester.

Semester 1 = IA Rough Draft of certain sections (50% based on meeting deadlines)

Semester 2 = IA Final Draft (% TBD based on meeting deadlines through the IA process)

CLASS EXPECTATIONS and REQUIREMENTS:

Expectations:

Students are expected to attend all classes and be active participants. I expect all members of the classroom to respect others and themselves as well as the instructional time that we share together. This is a time to work and learn, and students are expected to be prepared (**work completed, Chromebook present and charged**) to do so. It is also the responsibility of students to be organized so that they do not lose materials or miss assignment deadlines. Grades will reflect the amount of effort taken in the completion of home assignments, classwork, and labs. Student learning will be assessed with quizzes, tests, discussion and analysis questions, and lab write-ups. Students are expected to follow all of the school-wide rules and policies.

Materials Required:

- One (1) 3-ring binder-3 inch
- 12 dividers
- Notebook paper
- Pens, pencils, and highlighters
- Scientific Calculator
- Colored Pencils
- Internet access and computer/printer
- Index cards to make flash cards
- A flash drive for saving computer files

GRADE SCALE

100 - 90%	= A
89 - 80%	= B
79 - 70 %	= C
69 - 60%	= D
59 - 0%	= F

PERCENT OF WEIGHTED SCORES

Classwork	10%
Tests	35%
Quizzes	25%
Labs/Design labs/projects	20%
One Pagers	10%

LATE WORK IS NOT ACCEPTED IN IB BIOLOGY!!!!

Grades will be posted on PowerSchool in a timely manner. It is the responsibility of the student and parent/guardian to monitor grades. Grades can be monitored on PowerSchool.

Attendance:

This is a lab intensive (especially 1st semester) and discussion driven course. Therefore, it is essential that your child maintains good attendance. This includes coming to class on time and being prepared every day. Students with **unexcused** absences will receive a zero for the work done during class that day. **Students with excused absences have five days to arrange to make up the missed work.** It is the student's responsibility to see the instructor to receive the missed assignments and class notes that they have missed.

Student Responsibilities When Absent (excused absence):

- It is the student's responsibility to get any class notes or discussion information missed.
- It is the student's responsibility to contact the instructor and determine what work was missed while absent. This includes class notes, homework assignments, tests, quizzes, labs, and projects. Make-up will be available online or in the classroom container.
- **Assignments that are not made up will receive a grade of zero (even if the absence is excused).** If a student is absent on the day an assignment is due, the assignment will be due the day the student returns or it will be considered late. If a test or quiz is missed due to an excused absence, a make-up time needs to be scheduled immediately upon a student's return.

Students are expected to check Google Classroom regularly. If a student is absent (regardless of circumstances or duration of absence), they should check Google Classroom for assignments and/or videos of class lectures. Students are expected to keep up with assignments when they are absent (specific circumstances may be evaluated on an individual basis).

Home Assignments:

Students will be given home assignments on a regular basis that will include readings from the textbook (with notes and/or discussion questions), worksheets, completion of laboratory write-ups, and doing the necessary work to complete on - going projects. There will also be classwork and in-class quizzes that will utilize home assignments. Major home assignments will be posted in the classroom and on Google Classroom. Student performance will benefit from regular completion of home assignments.

Group Work:

We will frequently work in pairs and teams, particularly in the laboratory. Sometimes I will allow you to choose your own partner, at other times I will assign students to work together. I expect you to accept these assignments in a cooperative manner. **Although we will do lab work in teams, each student will write up his/her own lab report.** During group work, answers and solutions may be freely shared, but all members are expected to contribute.

Students should adhere to the IB Academic Integrity Policy at all times. Simply copying answers from another lab report, homework, etc. without having helped to produce the product is plagiarism and will be treated as such.

All work submitted by students should be their original work. Cheating and/or plagiarism will be handled case by case according to the IB Academic Integrity Policy and these assignments will result in an automatic "0" regardless of the assignment's weight.

Student Assistance:

After school and morning (8:00-8:30) tutoring will be available. If you are struggling with the course, you are expected to see me after school or in the morning so you can determine what you need to do to get back on track.

Laboratory Safety:

The student is responsible for his/her personal safety as well as those around him/her. This is the most important requirement of any laboratory science. Refer to the safety contract for specific guidelines. It is expected that all students will know how to respond to an emergency with the appropriate action. **If you are unable to follow laboratory procedures, you will lose lab privileges.**

Late Assignments

All **IB/major** assignments will be due on Mondays (for this class, these are primarily IA components). Each day late will result in a 10 point penalty. The Friday after the Monday deadline is the absolute deadline. Any major assignments not turned in by that Friday will receive a zero as the final grade.

Please take a moment to complete the following information and sign below, acknowledging that you and your student have read and understood the syllabus, safety contract, and class expectations.

Student signature _____

Parent signature _____

