**IB Biology HL 2023-2025**

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The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

IB learners strive to be:

**Inquirers** They develop their natural curiosity. They acquire the skills necessary to conduct

inquiry and research and show independence in learning*.* They actively enjoy

learning and this love of learning will be sustained throughout their lives.

**Knowledgeable** They explore concepts, ideas and issues that have local and global significance.

In so doing, they acquire in-depth knowledge and develop understanding

across a broad and balanced range of disciplines.

**Thinkers** They exercise initiative in applying thinking skills critically and creatively to

recognize and approach complex problems, and make reasoned, ethical

decisions.

**Communicators** They understand and express ideas and information confidently and creatively

in more than one language and in a variety of modes of communication. They

work effectively and willingly in collaboration with others.

**Principled** They act with integrity and honesty, with a strong sense of fairness, justice and

respect for the dignity of the individual, groups and communities. They take

responsibility for their own actions and the consequences that accompany

them.

**Open-minded** They understand and appreciate their own cultures and personal histories, and

are open to the perspectives, values and traditions of other individuals and

communities. They are accustomed to seeking and evaluating a range of points

of view, and are willing to grow from the experience.

**Caring** They show empathy, compassion and respect towards the needs and feelings of

others. They have a personal commitment to service, and act to make a positive

difference to the lives of others and to the environment.

**Risk-takers** They approach unfamiliar situations and uncertainty with courage and

forethought, and have the independence of spirit to explore new roles, ideas

and strategies. They are brave and articulate in defending their beliefs.

**Balanced** They understand the importance of intellectual, physical and emotional balance

to achieve personal well-being for themselves and others.

**Reflective** They give thoughtful consideration to their own learning and experience. They

are able to assess and understand their strengths and limitations in order to

support their learning and personal development.

**Course Description**

IB Biology HL is an intensive, college level course. We will meet for three lecture hours and 2 lab hours per week during your Junior and Senior years. This course provides an in-depth understanding of structure and function in cellular to global hierarchies and the universal features that exist in biologically diverse ecosystems. It is a two-year course. A student who earns a passing grade in IB Biology HL will earn one credit per year. Junior year an additional half credit can be earned for a passing grade in the lab section (See student handbook for weighting policy.) At the end of the second year IB students will take the IB exams.

**Prerequisites**

Biology I-H, Chemistry I-H, Physics I-H(suggested)

**IB Program**

The IB Biology Higher Level course consists of the core material and additional higher level material (more detailed coverage of core topics). The attached sequence of topics shows the core material and the additional higher level material that will be covered.

**External Assessment**

This is more commonly referred to as the IB exams/papers. You will take the IB exams after successful completion of the two year course. Your performance on the IB exams counts as 80% of your IB final assessment.

|  |  |  |  |
| --- | --- | --- | --- |
| Component | Overall Weighting (%) | Duration (hrs) | Format |
|  |  |  |  |
| Paper 1 | 36 | 2 | 40 mc(40 marks) + 4 DBQs on lab and syllabus content(35 marks |
| Paper 2 | 44 | 2.5 | DBQ+short answers questions+ two out of three extended response questions |

**Internal Assessment (IA)**

This is more commonly referred to as laboratory investigation. Your senior year you will be required to turn in a lab report for formal internal assessment. This lab will be assessed according to IB standards and will be submitted to the IBO for review. Internal assessment counts as 20% of your final assessment.

**Collaborative Science Project**

The project is an interdisciplinary project providing a worthwhile challenge, addressing real-world problems that can be explored through science. Through the identification and research of complex issues, students will develop an understanding of how interrelated systems, mechanisms, and process impact a problem. Students will then apply their collective understanding to develop solution-focused strategies to address the issue. The project supports the development of students’ ATL skills, including teambuilding, negotiation, and leadership.

**Textbook**

**Materials Needed**

3-ring binder(for lab), loose-leaf paper, additional notebook(class notes),

ink pens, pencils, scientific calculator

**Homework**

Homework is an extremely important part of this course. Assignments are chosen to provide practice and to check for understanding of newly introduced material. Homework will be assigned daily. (Note that this includes daily study and work on topic cards). Studies suggest that a typical IB student should expect to spend approximately 3 hours a week on homework per subject.

* Each set of topic cards are due on quiz/test day and count as a homework grade.
* Quizlet: https://quizlet.com/join/fBTebtkc7
* Quiz Cards Submitted on Test day receives 75%
* Quiz/Test Cards Submitted up to a week late receives 50%
* One week post test date Zero credit
* Each week will involve answering a Discussion Board Question posted to the class or an article from Newsella
  + These will be done through Schoology
  + These are always due on Monday.
  + Due to the nature of the assignment, no late submissions will be allowed
* All other assignments
  + As work will be normally returned within several days and answers given, work submitted a day late will receive half credit and 25% credit two days late.

**Quizzes**

Regular quizzes will serve as a preview for major tests. Pop quizzes may be given on reading assignments and/or cards assigned for homework.

**Major Tests**

Major tests may cover several chapters of the book and usually cover numerous assessment statements.

**Make-up Policy**

In the event of absence, the make-up policy as stated in the SSD Grade Handbook will be enforced.

* • Makeup work is available to all students.
* • Students are responsible for asking teachers for the makeup work upon returning to class.
* • When students are absent, a zero will be recorded by the teacher until the student completes his/her makeup assignments.
* • Makeup work, including tests, may be an alternate version to assess what the student has learned.
* • Missed assignments must be turned in by the next grade progress report.

Students missing class should access the class website where classroom assignments are posted daily. You are expected to be prepared for any work assigned before your absence.

**Retake Policy**

Per SSD Grade Handbook : Students scoring below 60 on an assessment in the major grading category must be given an opportunity to be retaught and reassessed. The student who fails an assessment in the major category will be given one more opportunity to earn a passing grade on the same grade level standards after re- teaching has been provided. The teacher will determine, based on the circumstances, if a student should retake the entire assessment, a portion  of the assessment, or an alternative assessment on the same grade level standards. The student will receive the higher of the two scores (original assessment grade v. re-assessment grade) not to exceed a passing grade of 60.  (Exclusions: EOC tests and final examinations).

Additionally at my discretion you may retake any part or whole quiz, test, or lab for a higher grade to exceed a 60. A formal plan must be submitted to me after a conference and/or reteaching has occurred.

**IB Biology Grading(Junior Year)**

* Test 50%
* Quizzes 25%
* Homework 25%

**IB Biology Lab Grading (Junior Year)**

* Grades will be earned through prelab quizzes, informal lab reports, formal lab reports, end of quarter tests and homework assignments.
* Assignments will be weighted based on level of difficulty. (ex. A formal lab report would be weighted heavier than where data had been collected, processed and a few questions answered.)

**IB Biology Grading (Senior Year)**

* Test 40%
* Quizzes 20%
* Homework 20%
* Lab 20%
* The IA will be your 3rd quarter lab grade
* Collaborative Science Project will be the 4th quarter lab grade.

**Course Expectations**

Students are expected to complete all daily assignments accurately, submit all assignments on time, study adequately for quizzes and major tests, participate in learning and ask appropriate questions, bring all necessary materials to class, and give their best effort in all work.

**Course Outline**

Junior Quarter 1

A 1.1 Water 3

A 1.2 Nucleic Acids 5

B 1.1 Carbohydrates and Lipids 4

B 1.2 Proteins 5

C 1.1 Enzymes and Metabolism 5

A 2.2 Cell Structure 5

B 2.2 Organelles and Compartmentalization 3

Junior Quarter 2

B 2.1 Membranes and Membrane Transport 6

D 2.3 Cell Specialization 4

C 1.2 Cell Respiration 5

C 1.3 Photosynthesis 6

D 1.1 DNA Replication 4

D 1.2 Protein Synthesis 6

Junior Quarter 3

D 1.3 Mutations and Gene Editing 5

D 2.2 Gene Expression 3

D 2.1 Cell and Nuclear Division 4

D 3.2 Inheritance 8

A 3.1 Diversity of Organisms 5

A 3.2 Classification and Cladistics 3

Junior Quarter 4

A 4.1 Evolution and Speciation 5

D 4.1 Natural Selection 4

A 2.1 Origin of the Cell 2

A 2.3 Viruses 2

B 4.1 Adaptation to Environment 3

B 4.2 Ecological Niches 4

C 4.1 Populations and Community 5

C 4.2 Transfers of Energy and Matter 5

Senior Quarter 1

A 4.2 Conservation of Biodiversity 3

D 4.2 Stability and Change 6

D 4.3 Climate Change 4

B 3.2 Transport 5

B 3.1 Gas Exchange 4

B 3.3 Muscle and Motility 3

C 3.2 Defense Against Disease 5

Senior Quarter 2

C 2.2 Neural Signaling 6

C 2.1 Chemical Signaling 4

D 3.3 Homeostasis 4

D 3.1 Reproduction 8

C 3.1 Integration of Body Systems 7

B 2.3 Cell Specialization 3

Senior Quarter 3 and 4

Review

Practice Papers