IB Biology HL

Course Syllabus

Course Description:

This is a two-year course that will provide an in-depth view of the biological world. After completing this course, students will more clearly understand the complexity of life on earth. Students will also be able to take the Higher Level I.B. exam in Biology after the second year. Various methods of disseminating the information will be utilized. Laboratories, lecture/discussions, and cooperative learning strategies will all be utilized to allow you to fully comprehend the information.

Through the overarching theme of the nature of science, the course aims to enable students to:

1. develop conceptual understanding that allows connections to be made between different areas of the subject, and to other DP sciences subjects
2. acquire and apply a body of knowledge, methods, tools and techniques that characterize science
3. develop the ability to analyze, evaluate and synthesize scientific information and claims
4. develop the ability to approach unfamiliar situations with creativity and resilience
5. design and model solutions to local and global problems in a scientific context
6. develop an appreciation of the possibilities and limitations of science
7. develop technology skills in a scientific context
8. develop the ability to communicate and collaborate effectively
9. develop awareness of the ethical, environmental, economic, cultural and social impact of science.

II. Curriculum model overview

The DP biology course promotes concept-based teaching and learning to foster critical thinking.

The DP biology course is built on:

. approaches to learning

. nature of science

. skills in the study of biology.

These three pillars support a broad and balanced experimental program. As students' progress through the course, they become familiar with traditional experimentation techniques, as well as the application of technology. These opportunities help them to develop their investigative skills and evaluate the impact of error and uncertainty in scientific inquiry. The scientific investigation then places a specific emphasis on inquiry-based skills and the formal communication of scientific knowledge. Finally, the collaborative sciences project extends the development of scientific communication in a collaborative and interdisciplinary context, allowing students to work together beyond the confines of biology.

Abridged from the IB syllabus (click on this link to read the entire IB syllabus)

Contact:

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Materials:

- Highlighter
- Pens (Black Only for Lab write-ups)/Pencils
- Composition (composition notebook is 7.5 x 9.75 inches is preferred)
- Scientific Calculator
    - Please check the link for expectable calculators

Course Outline Covers 2 Years

Syllabus component	Recommended teaching hours	
	SL	HL
Syllabus content	**110**	**180**
Unity and diversity • Water • Nucleic acids • Origins of cells • Cell structure • Viruses • Diversity of organisms • Classification and cladistics • Evolution and speciation • Conservation of biodiversity	**19**	**33**

Syllabus component	Recommended teaching hours	
	SL	HL
Form and function • Carbohydrates and lipids • Proteins • Membranes and membrane transport • Organelles and compartmentalization • Cell specialization • Gas exchange • Transport • Muscle and motility • Adaptation to environment • Ecological niches	**26**	**39**

Interaction and interdependence • Enzymes and metabolism • Cell respiration • Photosynthesis • Chemical signaling • Neural signaling • Integration of body systems • Defense against disease • Populations and communities • Transfer of energy and matter	**31**	**48**
Continuity and change • DNA replication • Protein synthesis • Mutations and gene editing • Cell and nuclear division • Gene expression • Water potential • Reproduction • Inheritance • Homeostasis • Natural selection • Sustainability and change • Climate change	**34**	**60**
Experimental program	**40**	**60**
Practical work Collaborative sciences project Scientific investigation	20 10 10	40 10 10

Rules and Expectations

For us to get along this school year there are a few rules that need to be followed.

RULE #1: Be courteous and thoughtful to others. This same courtesy and respect should also be extended to people outside of the class.

RULE #2: Be prepared to take notes, do labs, and participate in class. If there is homework due, you should be ready to turn it in upon your arrival to class.

RULE #3: Stay in your seat during lectures and discussions.

RULE #4: Clean up the classroom before leaving.

RULE #5: Observe all safety rules. If you break a safety rule you will receive a "0" for the lab.

Rule#6 Papers are to be turned into turnitin.com when instructed anything over 15% will have to be done over for half 50% credit there will be No exceptions of plagiarizing/cheating!!

TECHNOLOGY RULES

1. No cell phones, cameras, ipods, ipads or laptops when not necessary. Don't let these things become a distraction!
2. When using laptops
    a. Please be courteous and on task.
        i. If you are off task with the laptop/Chromebook, it will be taken and you will receive a zero on the assignment.

Behavior Steps and Consequences

If these basic rules are followed we will have no problems and the year will be very enjoyable and fun for all of us. If these rules are not followed then there will be disruptions and the learning process will be interrupted. If you choose not to observe these rules certain things will happen.

1. A verbal warning and a reflection in your class participation grade.
2. The second time I have to ask you to do something you will be asked to stay after class so I might talk with you. At this meeting we will come up with a plan to help you observe the rules.
3. If the behavior continues, I will call home and discuss my concerns with your parents in order to try to alleviate the problem.
4. If the behavior persists, I will involve the administration and together we will devise a plan to alleviate the problem.

Make-up/Late Work Policy

- **Late Assignments** There should be no late assignments. **Late work will be accepted for 1 week with up to a 50% deduction in credit awarded.**
- **Absences** You are responsible for getting your missed assignments. IT IS NOT MY RESPONSIBILITY TO REMIND YOU!! **Check the schedule**
- **Work missed is due on the next day present at school**. After that date work will fall under late work policy. If you miss the day it was due, it is due upon your return. This includes exams. If you only miss the day of the exam you must take it upon your return to class**.**

IB BIOLOGY ACADEMIC INTEGRITY POLICY*

Quartz Hill High School expects all students to abide by ethical academic standards.

Academic dishonesty—including plagiarism, cheating or copying the work of another, using technology for illicit purposes, or any unauthorized communication between students for the purpose of gaining advantage during an examination—is strictly prohibited.

The Academic Integrity Policy covers all school-related tests, quizzes, reports, class assignments, and projects, both in and out of class.

The purpose of the Academic Integrity Policy is to prepare students for the reality created by the technology explosion, for the world of college and beyond, where cheating and plagiarism have dire consequences.

Plagiarism is not the same as cooperation or collaboration. I will often expect, ever encourage, students to work on assignments collectively. This is okay, as long as whose work being presented is clearly relayed.

- **Collaboration** is to work together (with permission) in a joint intellectual effort.
- **Plagiarism** is to commit literary theft; to steal and pass off as one's own ideas or words, and to create the production of another. When you use someone else's words, you must put quotation marks around them and give the writer or speaker credit by citing the source. Even if you revise or paraphrase the words of someone else, if you use someone else's ideas you must give the author credit. Some Internet users believe that anything available on-line is public domain. Such is not the case. Ideas belong to those who create and articulate them. To use someone else's words or ideas without giving credit to the originator is stealing.
- **Cheating** includes, but is not limited to, copying or giving an assignment to a student to be copied (unless explicitly permitted by the teacher). Cheating also includes using, supplying, or communicating in any way unauthorized materials, including textbooks, notes, calculators, computers or other unauthorized technology, during an exam or project.
- **Forgery** or **stealing** includes, but is not limited to, gaining unauthorized access to exams or answers to an exam, altering computer or grade-book records, or forging signatures for the purpose of academic advantage.

Students found to have engaged in academic dishonesty shall be subject to disciplinary as well as academic penalties, as outlined below.

Possible Consequences	
Copying class work or homework	Zero on assignment, parent notification
Plagiarizing or cheating on an lab, exam or major assignment	Zero on assignment/exam Counselor and administration notification Parent conference

***** *Adopted from John. F Kennedy High School's academic integrity policy.*

Grading procedure

Tests/Quizzes/Projects	60%
Labs/Activities	30%
Homework/Participation	10%

IB grading procedure

External Assessment	80%
Internal Assessment	20%

IB External Assessment Specifications

Assessment at a glance

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade
		SL	HL	
External		**3**	**4.5**	**80**
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions (four questions that are syllabus related, addressing all themes)	1.5	2	36
Paper 2	Data-based and short-answer questions Extended-response questions	1.5	2.5	44
Internal		**10**		**20**
Scientific investigation	The scientific investigation is an open- ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

[IB Internal Assessment Details]

I have read and understand the syllabus for this course.

_____

Student Name (printed) Signature: Date

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Parent Name (printed) Signature Contact Number Date