IB HL Biology II Class Syllabus

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Course Description

Biology is a challenging and diverse topic; best explored utilizing a variety of different instructional tools, including – but not limited to: interactive computer based technology, laboratory explorations, active class discussion, and extensive analysis of current scientific literature and research.  The course of study in the second year of IB biology begins by re-focusing attention on attributes common to all living organisms - despite the immense variation we observe in physical and behavioral characteristics of living organisms.  The major cellular processes emphasized include; cell membrane transport, cell respiration, photosynthesis, inter-cellular signaling, and secondary messenger systems within cells.  Throughout the year, students will be encouraged to refine their notions of the processes of evolution by natural selection, and apply these to an analysis of the evolution of life on our planet from a cellular and molecular perspective.  The second year of IB biology will conclude with a survey of newly developing technologies that are allowing researchers to unravel the complexities of a number of sub-cellular mechanisms that relate directly to important current topics such as, stem cell research, gene therapy, and infectious disease transmission.

AIMS

•To provide students with a challenging and creative scientific curriculum.

•To provide students with a body of knowledge that characterizes science and technology within a global context.

•To provide students with opportunities to apply their knowledge of science and technology

•To enable students to develop their abilities to analyze, evaluate, and synthesize information.

•To develop students’ awareness of the importance of peer review in the formation of scientific principles.

•To provide opportunities for students to engage in scientific investigations that are both thought provoking and relevant.

Objectives

Demonstrate both an understanding of - (and ability to apply)- the following :

•Scientific facts and concepts

•Investigative methods & techniques

•Relevant scientific terminology

•Effective methods of communicating scientific knowledge

Demonstrate an ability to construct, analyze, and evaluate:

•Hypotheses, research questions, and predictions

•Investigative strategies and techniques to collect authentic data.

•Explanations and conclusions derived from scientific explorations.

## IB HL Biology II - Table of Contents of NEW BIOLOGY Topics

UNIT 1: **Topic 1** – **Cell biology *(REVIEW)***

UNIT 2: **Topic 2** – **Molecular** ***(REVIEW)*** **AND Topic 8 – Metabolism, Cell respiration and photosynthesis**

UNIT 3: **Topic 9 – Plant biology**

UNIT 4: **Topic 2** – **Molecular** **AND Topic 8 – Metabolism, Cell respiration and photosynthesis**

UNIT 5: **Topic 6 – Human physiology AND Topic 11 – Animal physiology AND** **Option D – Human physiology**

**IB Higher Level (HL) – testing in May study topics**

* Topics 1-11 (Paper 1 and 2)
* Options for HL (paper 3 ONLY) --- Option D – Human Physiology
* ONE Internal Assessments (Full Lab Reports – senior year)

**MATERIALS AND SUPPLIES**

You are responsible to have the following items in class **everyday**:

* 1 three ring binder (2”-3” in size) with these items:
  + Binder Dividers (5-7) and Sheet protectors (5-10)
* Pencils, pens and highlighters. (**ALL evidence MUST be written in pencil)**
* 1 Notebook or Composition notebook
* Scientific calculator & Flash drive (USB)

**GRADING**

Ronald Reagan High School uses 21st Century Grading Practices, with the levels below. The percentage used in this class to determine these levels is shown in parentheses.

AD = Advanced (90 - 100 %)

PR = Proficient (70 - 89 %)

BA = Basic (60 - 69 %)

MI = Minimal (1 – 59 %)

0 = No work turned in (0 %)

At the end of the semester, all grades are converted into a letter grade: A, B, C, D or U based on the accumulated evidence grades and the final exam.

**ASSESSMENTS**

Different kinds of work will be assessed in the class including, but not exclusively, homework, classwork, notes, participation, labs, projects, quizzes, and tests. If you are absent you are responsible for understanding the material that you missed!!! Making up work must be done on your own time, not in class.

The four umbrella standards that you will be assessed in are:

* **CRITERION A: Demonstrate knowledge and understanding of facts, concepts, terminology, methodologies, techniques, and communicating scientific information.**
  + *Portfolios/Notebooks* will be collected and graded once in each unit for a portfolio grade
  + *Quizzes* (evidence) on “understandings” from notes will occur 1-2 times per unit
* **CRITERION B: Applying facts, concepts, terminology, methodologies, techniques, and communicating scientific information.**
  + Each unit will have 2-3 *tests/quizzes* (evidence) in which “applications” and “skills” will be tested.
* **CRITERION C: Formulate, analyze, and evaluate hypotheses, research questions, predications, methods and techniques, primary and secondary data, and scientific explanations.**
  + These will be *labs* that are done 1-2 times per unit.
* **CRITERION D: Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations**
  + All evidence collected for the *IA* will be put in here.
    - The IA has six parts: Personal Engagement, Exploration, Analysis, Evaluation, Communication, and Resources.
  + How to be BA, PR, and AD is clearly indicated on the rubrics for the IA.
  + There is *only one IA* and there are no resubmissions. Detailed rubrics and checklists will be provided to you along with a lot of assistance and chances to submit rough drafts, pay attention to these options!

#### RE-TAKE POLICY

Re-takes for ANY piece of evidence can be done with a project (decided upon by the student only) and by making an appointment with the teacher to determine if the student has met the criteria for that particular piece of evidence. Anything being done not listed below must be approved by the teacher before starting. The grade for the *re-take project and re-take evidence* will replace the previous evidence grade. An AD, PR, BA, or MI will be giving to the student based on the performance on the project and the re-take evidence.

\*\*\*\*\*\*ALL RE-TAKE WORK TO BE COUNTED TOWARD THE QUARTER GRADES IS DUE **ONE WEEK** BEFORE THE END OF THE GRADING PERIOD/QUARTER\*\*\*\*\*

**Steps to follow when retaking a piece of evidence:**

1. **Get the piece of evidence signed by a guardian and make corrections to the evidence to get stamped.**
2. **Complete a Retake project which relates to the subject or topic being studied. The project has to show you know and understand the content being studied currently.**
3. **Show completion of the practices related to that evidence.**
4. **Make an appointment with the teacher to retake the piece of evidence (limited appointments will be taken during ELO and afterschool).**
5. **Take the evidence when scheduled. Your grade will be determined by the retake & project and will replace your current grade.**

**\*\*Only ONE retake per day!!!! (Not all pieces of evidence will have a retake)**

**EXAMPLES OF RE-TAKE PROJECTS:**

**LABS** -- Research a lab dealing with an aspect from class or you may do some variation of an existing lab. You may also design your own lab experiment.

**POSTERS/DRAWINGS**  -- Possible topics might be related to class curriculum. Graded on: a) originality, b) color, c) neatness, d) size, e) content, & f) correctness.

**CURRENT EVENT ARTICLE** -- Find any class related newspaper or magazine articles (within the last year) to read and write a 1 page summary on the article and how the article relates to what we are learning in class and what did you learn from the article. Summary must be typed and article attached.

**BINDER/PORTFOLIO POLICY**

1. All students are required to have a separate binder to be used **ONLY** for IB Biology notes. Loose pages will **NOT** be accepted in the front or back pockets of your binder. You will be asked to leave your binder periodically to have it checked & graded (generally twice a quarter). Use a **TAB** to indicate the location of UNITS in the binder. This should be followed by notes, all other class papers/practices, such as; labs, problems assignments, quizzes, etc.

2. **All binders/portfolios will contain the following:**

(a) Grading Sheet - to be used for keeping of individual grades & parent signature.

(b) Syllabus/Policies - All the policy sheets handed out at the beginning of the year.

(c) Class Notes & Practices - Should be neat and complete with a tab separating all units

(d) Notebook – including all openers, daily agendas & topic questions

3. **Binders/portfolios will be collected and grades based on the following:**

(a) Grade sheet up to date and correct with Parents signature and date on the grade sheet

(c) Unit information with tab, notes, stamped practices and correct/stamped evidences

(d) Overall binder neatness & no loose pages

(e) Notebook Completeness – all openers, daily agendas and topic questions complete

***MISSING Binders & Notebooks will be counted as Late work!***

**NOTEBOOK POLICY**

All students are required to have a separate notebook to be used **ONLY** for IB Biology. You will be asked to leave your notebook periodically to have it checked & graded. Use a **TAB** to indicate the location of units in the notebook. Inside the notebook you will also complete daily openers. Please **HIGHLIGHT** the dates of the openers/agenda.

**LATE WORK POLICY**

If you are in class the day a particular evidence is due, and do not hand it in, it is considered LATE. Daily evidence must be handed in **on time** for full credit. No LATE daily work will be accepted for full credit, except for illness. Evidence will be deducted 5% each day it is late (including weekends). No matter what score you receive, you are encouraged to turn in all evidence. In order to complete a re-take you will have to turn in the *original assignment* in order to start the re-take procedure. Remember, it is your responsibility to check on the work that you have missed during an absence and see that you turn in the assignment on time.

**ACADEMIC HONESTY**

Academic honesty is an important ideal that will be enforced. Copying another student’s work will result in a zero for both students. This means not only should *you* not copy, but do not let *another student* see or use your work! Plagiarism of any form will result in a zero, or possibly removal from the course with a failing grade!

**COURSE EXPECTATIONS**

Students will:

* Follow ALL school rules, including no use, activation, display of cell phones or electronic devices.
* **Be Safe**
  + - Be friendly and tolerant of others & Clean up your own space
* **Be Respectful**
  + - Be respectful in class by participating positively and respecting others
      * Listen when others talk
      * Use respectful language. (NO put-downs, swearing or teasing)
      * Support each other with praise and recognition
* **Be Responsible**
  + - Attend class
    - Be on time: in your assigned seat, with supplies and ready to learn
    - Complete all assignments on time and following given deadlines & Stay on task

**CLASSROOM CONSEQUENCES AND PROCEDURES**

*If you choose to Break Classroom Rules*

Consequences for breaking rules

1. Warning: verbal or written or “the look”
2. One-on-one conference after class
3. Phone call home to parent/guardian
4. Detention after school and phone call home (during class)
5. Referral to administrator and meeting with parent and administrator
6. Suspension and lowering of grade based on non-completion of work

\*\*\*All food, drinks (except water), or other items (backpacks, purses, handbags and jackets) will be confiscated. ALL electronic equipment will be confiscated and submitted to the office.

\*\*\***All papers which are being copied or cheating on, for this class or any other class, will be confiscated, destroyed and zeroed.** The student will also be referred to administration for further consequences.

**BATHROOM PASSES**

You student **ID AND agenda** will be required for you to use the pass. If a student is misusing pass privileges (wandering the halls or taking more than 5 minutes) privileges will be revoked. You can use the restroom during passing time or lunch.

**PROCESS REPORTS**

Progress reports will be sent home on a quarterly basis and grade sheets will have to be signed several times during the semester. You will monitor your progress through IC and on your grade sheet. Minimal, Basic, Proficient and Advanced grades will be converted into a numeric value and then translated into the traditional grade.

**AD/Advanced:** The student has mastered the standard, uses it consistently and independently over multiple pieces of evidence.

**PR/Proficient:** The student knows and understands the standard, and has learned to use it correctly with minimal guidance in most pieces of evidence.

BA/Basic: The student knows the standard and is working towards being proficient, but needs guidance to understand and uses it correctly and/or consistently in evidence.

**MI/Minimal:** The student is not proficient, shows minimal knowledge, understanding or purposeful use of the standard in their evidence, does not implement instruction, guidance or correction.

**I/No Evidence shown:** The student has not attempted to produce evidence showing knowledge, understanding or use of the standard.