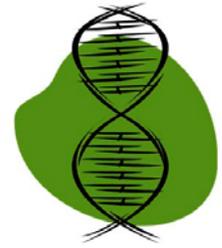


**Biology II: Genetics Syllabus**  
**Eisenhower High School (2015-2016)**  
**Mr. Logsdon**  
**Room 229**



## Introduction

Welcome to Bio II: Genetics! In this year long course, we will learn about life in its many forms. We will specifically be investigating processes that involve reproduction and conservation of living traits via heritable material (DNA, genes, chromosomes, plasmids), as well as current technology for the influence and manipulation of these traits.

By the end of this course, a successful student will:

- Have a working knowledge of heredity topics from the macro to the microscopic
- Have developed useful biological lab techniques
- Understand the role of genetics in everyday life
- Recognize the strengths and limits of science
- Skeptically analyze situations and data
- Be more prepared for the SAT

**Text :** *Prentice Hall's **Biology***

The text will be invaluable for a handful of topics. **However**, the majority of our reading will come from class supplements. Our modern understanding of Genetics evolves at a pace that is simply too fast-paced for a book published ten, five or even two years ago! Articles from *Discover*, *Scientific American* and *Nature* will be common. By the end of the year will we also be resourcing scientific journals such as the *American Journal of Human Genetics* and the *Journal of Medical Genetics*.



Sometimes...



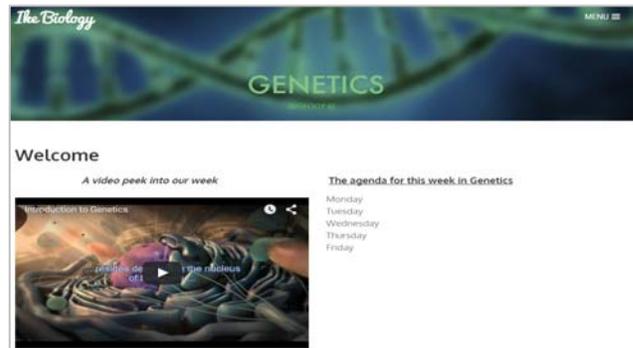
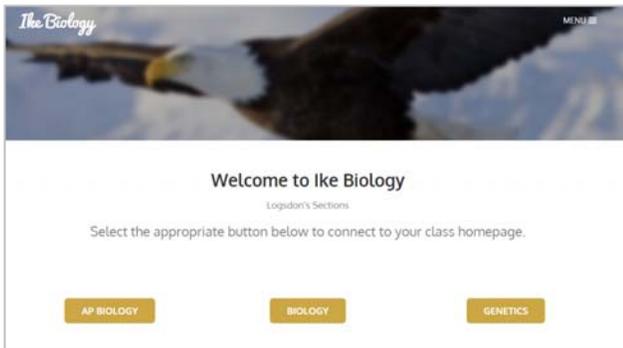
Often!

## Other daily required Materials and Resources

- Writing instrument(s) – pens/pencils, highlighters and/or colored pencils
- Internet access
- Three-ring binder (*suggested*)

**Our Class Web Site:** [ikebio.weebly.com](http://ikebio.weebly.com)

Here you will find a weekly agenda and digital copies of class materials. If you are absent or lose your original copy, you will be instructed to download the item(s) from our class site.



### **Make-Up and Late Work/Tests**

Except as noted below, make-up of missed tests and assignments will follow the attendance policy of the Utica Community Schools High School Handbook. You are expected to familiarize yourself with the rules regarding absences, tardies, and make-up work. Please take note of the following:

- Work missed because of an unexcused absence cannot be made up (student receives a zero).
- It is the student's responsibility to make arrangements with the teacher for planned absences.
- In most cases, tests & quizzes missed because of an excused absence must be made-up at an after-school help session. Class time is in short supply. It is unwise to add to missed time by setting students in the hall to test (a practice that is uncomfortable, unsecure and a fire hazard).

It is necessary to finish and deliver **ALL** assignments on their respective due dates. Because of modern communications, there is absolutely no excuse for:

- assignments not being turned in on time without prior approval;
- not knowing of assignments despite absence(s) for any reason; or
- not completing assignments.

Therefore, **assignments not turned in on time will not be accepted** !

### **Communication**

I welcome your questions, comments and concerns. You can reach me by one or more of the following:

Room: 229 (feel free to drop by; if the door is closed, knock)

Phone: (586) 797-1479 (there's voicemail there, but email is usually quicker)

Email: [jason.logsdon@uticak12.org](mailto:jason.logsdon@uticak12.org)

## Grades

Grades will be computed based on scores earned on the following weighted categories:

Tests/Quizzes – 60%      Homework – 10%      Labs/Projects/Case Study Work – 30%

Quarter and exam grades will adhere to UCS grading scale.

Semester grades are calculated according to the district 40/40/20 rule (Qtr 1/Qtr 2/ exam).

### UCS Grading Scale

100% – 94%	A	76% – 74%	C
93% – 90%	A-	73% – 70%	C-
89% – 87%	B+	69% – 67%	D+
86% – 84%	B	66% – 64%	D
83% – 80%	B-	63% – 60%	D-
79% – 77%	C+	below 60%	F

## Extra Credit

Extra credit will appear from time to time within assignments and assessments.

There are also a few permanent extra credit assignments (found on our Blackboard site). These take much time, planning and EXTRA work (thus the name). No extra credit will be earned/awarded during the final week of each quarter.

## Progress

Grades are available for viewing on the PowerSchool Parent portal. Please allow a reasonable amount of turn-around time for grades to appear on this site (up to 2 weeks). If curious about grade specifics, students should feel free to ask at any time BEFORE OR AFTER CLASS! Interrupting class for personal grade queries is impolite. Student grades will not be discussed during class time.

**Class Rules** – Students are to adhere to all school rules set forth in the Eisenhower Student Handbook. Rule infractions will result in a lowering of a student's grade. A few specific rules to highlight:

### Tardiness

Students are to be in their **assigned seats when the bell rings**. A student not in his/her assigned seat when the bell rings, will receive a tardy mark in PowerSchool.

### Cheating

Students are to do their own work unless working on a project that has assigned **group cooperation**. Students who are caught cheating will receive a "0" for that assignment, citizenship will drop and parents will be contacted. Repeated instances of cheating will result in an office referral. This includes web-based plagiarism!

### Cell Phones

Smart phones have become part of the fabric of student-life. There are appropriate and inappropriate times for Smart Phone use. These times will be indicated by Mr. Logsdon. There will NOT be a single instance of appropriate leisure/social use of phones. Phones being used for causal texting will be confiscated. Using a Smart Phone during tests constitutes cheating.

### Dismissal

The sound of the bell **does not excuse the class**. When all materials have been returned, the classroom is neat, and all students are sitting quietly in their assigned seats will the class be dismissed.

Students are expected to behave as responsible and mature young adults. Respect each other and the staff that are here to help you learn and succeed.

*Follow the 5 P's: BE PREPARED, BE PROMPT, BE POLITE, BE PRODUCTIVE and PARTICIPATE!*

# COURSE OUTLINE – SEMESTER ONE

## INTRODUCTION TO CASE STUDIES & PROBLEM-BASED LEARNING

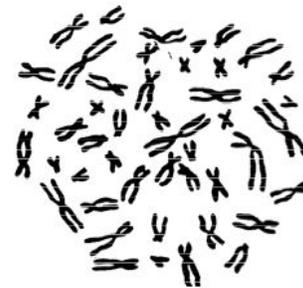
### UNIT 1: THE GENETIC BASIS OF LIFE

- **Life, Death and the Need to Reproduce**
  - Chapter 1
  - part of Chapter 3
- **Methods of Reproduction**
  - Chapter 10
  - Chapter 11



### UNIT 2: PATTERNS OF INHERITANCE

- **Mendel's Numbers & Laws**
  - Chapter 12
- **Human Patterns of Inheritance I**
  - supplemental readings



### UNIT 3: CHROMOSOMES

- **Fly Boy Findings**
  - part of Chapter 15
- **Human Patterns of Inheritance II**
  - supplemental readings

### UNIT 4: DNA

- **Structure and Function of DNA**
  - Chapter 13
  - supplemental reading
- **Genes & Mutations**
  - supplemental readings



## Case Studies and Problem-Based Learning

Details are important, but often accessible given 21<sup>st</sup> century resources. The ability to synthesize details into coherent concepts and trajectories of thought is the skill most in demand by colleges and universities. When surveyed, a majority of university faculty members believed that ‘teaching students to think critically is the aim of undergraduate education’.\*

While some of the topics in Biology II: Genetics will be novel, much of what will be covered is a deeper examination of heredity issues revealed in Biology I. To show mastery of the material, you will be asked to read, to reason and to discuss. There will be projects and presentations. Most importantly, there will be careful, considerate written responses. To prompt you, each unit will involve at least one case study.

A case study is a proposed situation involving topic material. Sometimes ripped from real-life events, often supported with data, our case studies involve multistep processes that lead to problem solving and critical thinking. The State of Michigan values these practices so highly, that they are the motivation behind the adoption of the Next Generation Science Standards for Biology curriculum:

- HS-LS Practice 1. Asking questions (for science) and defining problems (for engineering)
- HS-LS Practice 2. Developing and using models
- HS-LS Practice 3. Planning and carrying out investigations
- HS-LS Practice 4. Analyzing and interpreting data
- HS-LS Practice 3. Using mathematics and computational thinking
- HS-LS Practice 6. Constructing explanations (for science) and designing solutions (for engineering)
- HS-LS Practice 7. Engaging in argument from evidence
- HS-LS Practice 8. Obtaining, evaluating, and communicating information

*If you ever find yourself asking, “why are we doing it like this”, refer to the **NGSSs** practices listed above!*

To alleviate some anxiety over testing and outcomes, each unit will begin with a checklist of items. Some of these items will be as straight-forward as vocabulary definitions. Other items may involve interpreting data or responding to a prompt. It should be understood that the **NGSSs** mentioned above are ALWAYS assessed. To this end, every assessment will have some form of problem to address.

The Problem-Based Learning model supported by case study instruction can be frustrating. It can be fun. It can be loud and it can be introspective. With appropriate effort, it is always informative and will leave you with a better sense of the material.

You spent a year in Biology I gathering facts...

Biology II: Genetics now asks, **“What are you going to do with those facts?”**



## Problems With Problem-Based Learning (PBL)?

Name \_\_\_\_\_

Date \_\_\_\_\_ Hr. \_\_\_\_

Consider what you've read on the reverse of this page. Think back to your introductory case study on grade-inflation. Please be thorough and honest. Credit will be awarded for completion, not for support or criticism of PBL. Feel free to answer on a separate sheet of paper, if space is an issue.

1. Review the first two pages of the syllabus. How well do you see a PBL class fitting these standards of time, text, rules and grades?
2. Which of the state mandated NGSSs practices (*on the reverse*) did we address in our quick Introductory Case Study? Which do you see as being the most important to you and your future academic success (*no need to rewrite the entire NGSS, just use the code*)? Which will least impact your growth and learning? Explain your choices.
3. Is there a difference between 'being taught' and 'learning' material? How does your response to this question support or undermine a case-study centered classroom (*like ours*)?
4. What do you see as the strengths and weaknesses of group work?
5. Please share your (*or Mom & Dad's*) greatest concerns, hopes and expectations for Biology II: Genetics.