



## **Biology 12 Course Outline Spring 2025**

**Instructor: Ms. Carpio**

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**Period 2 (Room 111)**

**Course Overview:** In this course, we will explore the intricate and fascinating world of the human body. Our study will revolve around three big ideas to help us understand how the body functions and responds to environmental changes. The first is homeostasis, which is maintaining a stable internal environment through various physiological processes. The second is gene expression and protein synthesis, which involves the complex interaction between genes and the environment, producing proteins that carry out vital functions in the body. The third is organ system interrelationships to maintain homeostasis and how disruptions in one system can affect the function of others, leading to disease and dysfunction. By the end of the course, students will have gained a comprehensive understanding of these three big ideas and the physiological processes that govern the human body.

**BIG IDEA 1:** Homeostasis is maintained through physiological processes.

Biomolecules; metabolism; enzymes; feedback loops; transports across cell membranes.

**BIG IDEA 2:** Gene expression, through protein synthesis, is an interaction between genes and the environment.

DNA; gene expression; proteins and their relationship to the structure and function of all cells; genomics and biotechnology.

**BIG IDEA 3:** Organ systems have complex interrelationships to maintain homeostasis.

Micro to macro organization; organ systems structural and functional interdependence; maintenance of homeostasis; lifestyle differences and their effects on human health; a holistic approach to health; disease as an imbalance in homeostasis.

### **Course Materials:**

Students must bring a 3-ring binder, vocabulary notebook, papers, pens, pencils, highlighters, and a digital file system to store and organize your work.

### **Class Participation:**

Daily engagement and participation are encouraged, as they will be graded using a rubric.

### **Attendance Policy:**

Students are expected to arrive at class on time and ready to engage. If you are absent from the class, please check on Teams for any notes or handouts you missed. You must make up assignments in a timely manner in order to receive full credit.

### **Honesty Policy:**

Work will be assessed for authenticity. Dishonesty will result in consequences, including '0' marks or no credit.

### **Technology Policy:**

All technology, including cell phones, will be used at the discretion of the teacher.

### **Grading:**

<b>Coursework</b>	<b>Value</b>
Participation	5%
Quizzes	20%
Worksheets and Labs	20%
Projects/Presentations	10%
Unit Tests	20%
Final Exam	25%

**Total 100%**

*\* Be on time; stay on-task; organize materials; join class and group discussions; contribute to group work.*