

Troy High School Course Profile

Course Title: HL IB Biology

Course Pre-Requisites: Refer To Registration Presentation

Course Description: This is a second year higher level class that will focus on the key Anatomical and Physiological concepts of animals and humans in order to satisfy the Higher Level IB requirements and take the test in May. Most of the major biological principles will be discussed in this class and allow students to take the HL IB Biology Test (2nd year) and possibly the AP Biology test in May. This class will have a strong emphasis on medicine and Human Anatomy that will include doing research and a presentation on a particular cancer as well as a complete dissection of a fetal pig and practicals to assess their understanding. The goal of the class is to encourage and support students who are interested in a possible future career in medicine by preparing them to enter into a pre-Med program with a leg up on the competition.

The major concepts that are covered in this course are:

- Develop Anatomical Terminology
- Explore the History of Medicine
- Cytology (Study the cells of the Body)
- Cancer (mutated genes/Malignant cells)
- Histology (Study of Tissues)
- Skeletal System & Joints
- Muscular System
- Nervous System
- Digestive System
- Cardiovascular System
- Dissection Techniques
- Disorders that Affect Different Body Systems

Overview of the Course

The first semester will focus heavily on building your anatomy vocabulary base and cover the first eight chapters of the Hole's Anatomy textbook. We will also strengthen your ability to analyze data by review key statistical tools you'll need in order to develop & design your own investigation. There will also be a strong emphasis on learning the Skeletal system and Muscular system as well as researching a particular cancer as we review/explore the cellular and genetic aspects of life utilizing the HL Biology e-Textbook. The second semester will be focused on developing your dissection skills as we get more into the systems and learn more about physiology.

Students entering this course should already have a mastery of the following concepts and possess the following skills:

- **Concepts:**
 - A complete understanding of the major concepts learned in AP Biology
 - General knowledge of Cellular physiology and Chemistry.

- General knowledge of the Human body, cellular structures, and Animal systems
- **Skills:**
 - Design and conduct their own lab Investigation
 - Conduct research/search for articles/cite references
 - Handle higher level reading & vocabulary
 - Basic use of Google Docs, Google Slides, spreadsheets, and Google Classroom
 - Operate and use a Microscope
 - Identify & use lab equipment, make solutions including acids/bases
 - Understand/able to follow Lab Safety rules

Workload Expectations for this course (list typical amount of homework, projects, presentations, papers, etc.):

- Students will be expected to utilize and manage several resources which include textbooks, websites, and navigate the internet.
- Students will have daily reading assignments w/study-reading guides & video assignments
- In class students are expected to use their chromebooks, take class notes, and work through the daily introductory questions (IQ's)
- Students will be required to utilize the resources and be prepared for the levels of assessments which follows this general flow:
 IQ's----Reading quizzes----Mid-Unit quizzes----Unit Exams (multiple Chapters)
- Nightly Homework: students will spend approx. 30-45 min. / night depending on the time of the year. Cancer research projects & lab investigations (writing reports) can lead to longer nights of homework.