

Course Title: Genetics and Scientific Ethics

Teacher: Brian Counselman

Hour 3 - Semester 1 - 2021/22

0.5 Science Credit

COURSE INFORMATION:

Click [here](#) to hear Brian talk about his class!

Course Description:

This course is a tour of the cutting edge science of genetics. As genetics is discovering new innovations constantly, it is also a field of science that is on the front edge of scientific ethics as well. Learn about the function and anatomy of DNA in order to explore how genetics impacts our lives. Students will be expected to engage in research, discussion and projects about the influence of genetics within our bodies and the world around us.

Prerequisites:

None

Method of Instruction:

Reading, research, discussion, summative project

Course Objectives:

1. Explore what parts of who we are is determined by our genetics vs. our environment.
2. Explore how DNA translates into instructions for all life on Earth.
3. Explore how DNA is being utilized and manipulated in the world around to impact science, medicine, and society.

Standards:

SCI.LS3.B.h The variation and distribution of traits in a population depend on genetic and environmental factors. Genetic variation can result from mutations caused by environmental factors or errors in DNA replication, or from chromosomes swapping sections during meiosis.

HS-LS3-2. Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and (3) mutations caused by environmental factors.

HS-LS3-3. Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

HS-ETS3-1. Ask questions to clarify and author's motivation for promoting unscientific or falsified information on science topics (e.g. climate change, vaccines, GMOs, nuclear energy) (SEP.1.h).

Graduate Vision Competencies:

Effective Communicator, Creative and Critical Thinker