

Genetics

Instructor: Mr. Ekren

Period 3; Semester 1

Course Number: #182

Credit Hours: ½ credit hour

Prerequisites: Successful completion of Biology 10

Room #: 108

Special Fees and/or tools needed for the course:

A three ring binder is required to be used for Genetics only. The binder will contain most of your classroom work and observations over the semester. You are expected to bring your binder, pen or pencil and any assignments to class each day. If any of these are missing and it requires class-time to get them, it will be considered a tardy. Textbooks will not be handed out, but kept in the room for reference.

Instructor Information:

Phone number (school): 218-338-6011 ext. 108

Email (best way to contact me): tekren@pp.k12.mn.us

Times available to meet with students:

Semester 1: 2nd & 4th period

Semester 2: 3rd & 4th period

(*Additional times available upon request)

Course Objective: The goal of Genetics is to study how DNA brings about characteristics or traits and how those characteristics are passed on. This course will focus on DNA as a molecule and its immense influence on our daily lives. Our discussions on this topic will not only apply to the areas of medicine, agriculture, and biology, but also philosophy, law and religion. The overall focus will be on the role science plays in ethics and decision-making.

Course description and content:

- 1. Macromolecules/Chemistry of Life**
- 2. Introduction to Genetics/Genetic Basics**
 - a. Basic cell biology
 - b. Mitosis & Meiosis
 - c. Mendel's laws of inheritance
 - d. Extensions of Mendelian Genetics
 - e. Sex chromosomes
 - f. Extranuclear Inheritance
- 3. DNA: The Genetic Material**
 - a. The basis of life
 - b. Copying your DNA
 - c. RNA
 - d. Translating the genetic code
- 4. Genetics & Your Health**
 - a. Sequencing your DNA
 - b. Genetic counseling
 - c. Inherited diseases
 - d. The genetics of cancer
 - e. Chromosomal disorders
 - f. Gene therapy
- 5. Genetics & Your World**
 - a. Human history and the future
 - b. Forensic genetics
 - c. Genetic makeovers
 - d. Cloning
 - e. Ethics
 - f. Applications of biotechnology

(*current science will be the lead into each unit, instructional methods will include lab, research and lecture)

Course Requirements/Hints for Success:

1. Be to class on time.
2. Have a pulse during class, meaning pay some attention.
3. Participate; this is a fairly small class so your questions and direct participation in activities will weigh heavily on your grade.
4. Take detailed notes when necessary.
5. Pay attention to the completion of all reading and research assignments.
6. Think and Reason! Learning is an active process.
7. ASK if you would like some help.

Course Policies:

Assignments: Late assignments will receive a 50% reduction in score and assignments will not be accepted 3 weeks after their due date. A score of 0 will then be put into the grade book.

Attendance: Regular attendance is important so that you may stay on pace with the class. If you miss time *I will place your missed work in the fill folders along the north wall of the room. Always check there first when you are gone and then ask me if you have any questions. If you miss a quiz or test please see me right at the beginning of class.

Grading: You will be graded in three areas and those three areas are weighted accordingly.

1. **Concepts (50%)**
2. **Lab-Work-Research (40%)**
3. **Work Habits (10%)**

A grade scale is located at the front of the room, it follows the standard 92%, 83%, 74%, 65%. Each major assignment will be accompanied by a checklist and a breakdown of how it will be scored. You will get this before we start so you have a better idea of what is expected of you.

Academic Dishonesty:

Science Department's Cheating Policy

Cheating will not be tolerated

Any offense for a student involved in cheating will result in a zero for that assignment, project, quiz, or test. If another person was actively involved in the cheating, that person will also receive a zero.

Plagiarism on an assignment will result in redoing the assignment for half the credit.

*All cheating will be reported to the Parkers Prairie High School Administration for discipline above and beyond my own.

**Remember that behavior that looks suspicious will be considered guilty and the disciplinary measures stated above would then be put into effect.

***The expression of opinions and viewpoints are encouraged in this class and are to be respected as opinions. They are however just that, opinion, and are useful in the encouragement and fostering of creative ideas. Please listen to classmates and also please express your view when appropriate.