**COURSE OUTLINE:**

January 8 – *Introduction to Cells*

We will learn about the scientists who discovered cells and review the differences between prokaryotic and eukaryotic cells. We will also learn about the cell theory.

January 15 – *Cells: Prokaryotes Lab*

Lab day! We will learn how to use microscopes, prepare slides, and view cells and organisms. We will view several types of prokaryotes from bacteria to algae to diatoms while reviewing the cell structures and functions of prokaryotic organelles.

January 22 – *Cells: Eukaryotes*

This week’s class is a basic introduction to eukaryotic cells – plant and animal cells. We will go over their similarities and differences and cover their organelles structure and function.

January 29 – *Chemistry of Life: Introduction to Biochemistry & Macromolecules*

We will start to learn about basic chemistry and how it relates to biology. We will start with carbohydrates and lipids and moving on to proteins and nucleic acids.

February 5 - *Chemistry of Life: Macromolecules*

QUIZ on cell organelles and functions! We will grade the quiz in class.

If needed, we will finish learning about macromolecules. Possible microscope lab time.

February 12 – *Macromolecules Lab*

This week will test foods for the macromolecule building blocks of life.

February 19 – *The Cell Membrane*

We will learn about the phospholipid bilayer cell membrane and include active and passive transport.

February 26 – NO CLASS!

March 4 – *Photosynthesis*

We will learn how plants capture sunlight and turn it into food!

March 11 – *Cellular Respiration*

This week we will explore how cells get energy and use energy through cellular respiration.

March 18 – *Aerobic vs. Anaerobic Respiration*

QUIZ on Cellular Respiration and Photosynthesis! We will grade the quiz in class

After the quiz, compare aerobic respiration to anaerobic respiration.

March 25 – NO CLASS!

April 1 – *DNA: From Gene to Protein*

We will learn how our genes are read to be copied for cell division and protein building. We will go over transcription and translation.

April 8 – *Mitosis & Meiosis*

This class we will go over how our cells reproduce through mitosis and meiosis. We will cover the many steps involved and rely on our knowledge of cell organelles and transcription and translation processes.

April 15 - *Genetics*

We will cover basic genetics terms like alleles, phenotypes, genotypes. We will go over some classic examples of studies done in the field of genetics and practice Punnett Squares.

April 22 – *Meiosis and Fertilization*

In this class we will work through a packet together on meiosis and genetics to understand how the two are connected.

April 29 – *Evolution, Adaptation, and Natural Selection*

As one of the final classes of the semester, we will explore the theory of evolution and natural selection bringing it all back around to our ecology unit from the fall semester.

May 6 – *“Bingo Final”*

Let’s play BINGO!!! Using boards you create, we will play biology vocab Bingo covering everything we learned this semester but focusing mainly on cell reproduction, genetics, and evolution. There will be prizes!