Science 30 Course Outline

# Block 4. Ms. Redding, Room 213

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My goal is to create a safe, engaging environment where students can take risks, grow and develop the necessary confidence to overcome obstacles and challenges. These expectations and routines are in place in order to help every student in the classroom succeed in this course. If I am concerned about your success in any way, I may contact your parents/guardians and/or the administration for further support.

**Classroom Expectations and Routines**

Absences: You are expected to take an active part in your schooling. For this reason, you are responsible for finding out about missed assignments as well as what went on in class while you were absent. You will absolutely not be hunted down over missed work! This includes information about exams and quizzes. The excuse “I wasn’t here so I didn’t know”, has no validity in this classroom. Finally, class time will not be used to catch you up in any way.

Eating/drinking: Any food or drink brought to class must not be disruptive and must be cleaned up after. Abuse of this guideline will result in the privilege being taken away. No food or drink is allowed during labs.

Late for class: Please be on time as it is disruptive for the class if you are late. If you are late please enter the classroom quietly.

Leaving class: Please ask me for permission should you need to leave class. To further avoid disruption, I ask that only one student be out at a time, so please be considerate of others and keep your breaks short. Abusing a break (ex. wandering the halls/hanging out) will result in the loss of this privilege. If you need to leave class early for other commitments please let me know ahead of time.

Cell phones: Please no cell phone use during class. Phones should be turned off and kept out of sight at all times.

Laptops/iPods/MP3 players: These devices are permitted only during seat work (not during lesson time). Electronic devices of any type are prohibited in any examination (including quizzes).

Be respectful to everyone in the classroom: That includes listening while others are speaking, respecting other’s property and use of appropriate language (ex. no swearing).

### Unit A: Living Systems Respond to Their Environment

* *structure and function of the circulatory system*
* *composition of human blood tissue and the role of blood*
* *immune response and defense mechanisms to pathogens*
* *cardiovascular health*
* *chromosomal behavior and the principles of Mendelian genetics*
* *deoxyribonucleic acid DNA and protein synthesis*
* *mutations and gene therapy*

**Unit B: Chemistry and the Environment**

* *acids and bases*
* *pH and hydronium ion concentration*
* *stoichiometry and titration of strong monoprotic acids and strong monoprotic bases*
* *buffers and buffering capacity*
* *sources and environmental impact of SOx, NOx, acid deposition and photochemical smog*
* *sources, uses and environmental effects of organic compounds*
* *biomagnification and persistence of pollutants*

**Unit C: Electromagnetic Energy**

* *devices based on electric and magnetic fields (electric motors, generators & transformers)*
* *the electromagnetic spectrum, its*
* *properties and its effects on living tissue*
* *basic properties of field theory - gravitational, electric and magnetic fields*
* *principles of field theory and applications in technology*
* *technologies used to study the structure and history of the universe*
* *circuitry genetic engineering*

**Unit D: Energy and the Environment**

* *global energy consumption and its impact on the biosphere*
* *sources of renewable energy*
* *balancing energy use with sustainable development*
* *conversion of solar energy, fossil fuels and wind and water power into thermal and*
* *electrical energy*
* *fission and fusion, nuclear change*
* *heats of formation and Hess’s law*
* *nuclear, wind, hydro, biomass, tidal, solar, fuel cell and geothermal alternative energy technology*

**Evaluation/Assessment:**

The course is composed of 4 units. There will be daily formative course work and it is essential that this work is completed to ensure success on summative work.

Students will be evaluated on their summative course work – tests, quizzes, lab reports and Unit Exams.

Science 30 consists of four units of study:

1. Living Systems and how they Respond to their Environment – 25% of course work
2. Chemistry and the Environment – 25% of course work
3. Electromagnetic Energy – 25% of course work
4. Energy and the Environment ­– 25% of course work

Within each unit, 60% of the student’s grade comes from quizzes and assignments; the remaining 40% will come from Unit exams and tests.