#  Highwood High School

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| **SCIENCE 30 COURSE OUTLINE****Highwood High School** |

### Teacher: Mr. Kevin Jones

Semester: Spring Semester 2017

School Year: 2016-2017

Contact Information: Classroom: Rm 206

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**General Course Outcomes**

**Unit A: Living Systems Respond to their Environment**

**Overview**: The human body continually interacts with the external environment. In this unit, students learn that the circulatory system assists in this interaction between the blood cells and the external environment and, with the immune system, defends the body against disease-causing organisms. Students apply the principles of heredity and molecular genetics to explain human disorders and to assess the risks and benefits of genetic technologies.

**General Outcomes:**

1. Analyze how the circulatory system facilitates interaction between the human body’s blood cells and the external environment, and investigate cardiovascular health.

2. Analyze the defence mechanisms used by the human body to protect itself from disease-causing organisms found in the external environment.

3. Apply the principles of heredity and molecular genetics to explain how human diseases can arise from inherited traits, the risks and benefits of genetic technology, and the need for ethical considerations in the application of scientific knowledge

**Unit B: Chemistry and the Environment**

**Overview**: Society is becoming increasingly reliant upon chemical substances in maintaining quality of life. However, these chemicals and their by-products can also adversely affect the environment and living systems. Knowledge of chemistry is essential to fully understand the benefits and risks of chemicals to humankind, and in monitoring the emission of these substances into the environment. In this unit, students examine the impact of acids and bases, organic compounds and air pollutants, on aquatic and terrestrial ecosystems.

**General Outcomes:**

1. Analyze the sources and the effect of acids and bases on the biotic and abiotic components of the environment

2. Analyze the sources and the effect of organic compounds on the environment

3. Analyze, from a variety of perspectives, the risks and benefits of using chemical processes in meeting human needs and reducing the impact on the environment

**Unit C: Electromagnetic Energy**

**Overview**: Electrical energy transmission and transformation technologies, based on field theory and on an understanding of electromagnetic radiation (EMR), play an important role in meeting human needs. These technologies are also useful in furthering our understanding of the universe. In this unit, students investigate the functioning of these technologies, the principles of field theory and the properties of EMR.

**General Outcomes:**

1. Investigate and describe the technologies used in daily life and used to study the universe that are based upon the applications of field theory and properties of electromagnetic radiation (EMR).

2. Explain the field theory, and analyze the applications of field theory in technologies used to produce, transmit and transform electrical energy.

3. Describe the specific characteristics of the electromagnetic spectrum, and describe the applications of these properties in communication systems and remote sensing technologies used to study the universe.

**Unit D: Energy and the Environment**

**Overview**: Sustainable development requires balancing global energy demands with maintaining a viable biosphere. Students investigate and analyze the sources of renewable and non-renewable energy for meeting global energy needs. In so doing, students explore the need for multiple perspectives, and the need to develop energy-efficient technologies for a sustainable energy future.

**General Outcomes:**

1. Explain the need for reconciling the growth in global energy demands with maintaining a viable biosphere

2. Describe the Sun as Earth’s main source of energy, and explain the functioning of technologies that convert nuclear and tidal energy into useable forms

3. Analyze the risks and benefits of various energy sources, taking into consideration a variety of perspectives to determine if the energy sources and conversion technologies will meet societal needs, protect the environment and make judicious use of natural resources

To learn more specifically about each general outcome of this course, please refer to the following Alberta Education website:

[www.education.gov.ab.ca/k\_12/curriculum/bySubject/science/sci30out.pdf](http://www.education.gov.ab.ca/k_12/curriculum/bySubject/science/sci30out.pdf)

**Tentative Schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| Unit | Units of Study | Approx # of Classes | Final Weighting (%) |
| A | Living Systems Respond to their Environment | 23 | 17.5 |
| B | Chemistry and the Environment | 21 | 17.5 |
| C | Electromagnetic Energy | 18 | 17.5 |
| D | Energy and the Environment | 13 | 17.5 |
|  | Diploma Examination |  | 30 |

**Diploma Exam Thursday, June 29th 1:00-4:00 PM**

**🞻Please note that these dates are just approximate and that they may be changed with the exception of the diploma exam.**

**Course Evaluation**

Unit A: Maintaining Health 🡪 17.5%

Unit B: Chemistry and the Environment 🡪 17.5%

Unit C: Electromagnetic Energy 🡪 17.5%

Unit D: Energy and the Environment 🡪 17.5%

Final Exam (Diploma) 🡪 30%

**Within each unit, coursework will be weighted as follows:**

Labs and Assignments etc. 🡪 25%

Quizzes 🡪 25%

Exams 🡪 50%

**Resources**

 Science 30 – Alberta Education

 https://questaplus.alberta.ca/PracticeMain.html#

**Extra Help and Support**

Extra help can be obtained outside of class time if needed. Here is where you can find it.

* Your Teacher – Talk to me to schedule extra help sessions or try stopping by the classroom before or after school, or at focus.
* Other Teachers – Other teachers in the math department are often available for extra help if I am not. Please do not hesitate to ask other teachers for help.
* Please don’t feel like you can’t come for help. I really want you to succeed, and will help you in any way I can.

**Know what’s going on**

**Google Classroom**

Class Code: bno3f9

**Remind**



**Website**

http://science30jones.weebly.com

***Highwood Science Department***

**Classroom Expectations**

**Be Prepared!**

1. Always have your binder, textbook, **calculator**, pencil and eraser in class. All work is to be in **pencil**, otherwise it won’t be marked.
2. Be at your desk with your materials ready to work when the bell rings.
3. If you are unprepared for class on a regular basis, your parents will be contacted.

**Attendance and Punctuality**

Please be aware that Section 12 of the School Act states:

A student shall conduct him or herself to reasonably comply with the following code of conduct:

(a)                be diligent in pursuing the student’s studies;

***(b)              attend school regularly and punctually;***

(c)                co-operate fully with everyone authorized by the board to provide education programs and other services;

(d)                comply with the rules of the school;

(e)                account to the student’s teachers for the student’s conduct;

(f)                 respect the rights of others

http://www.qp.gov.ab.ca/Documents/acts/S03.CFM

If for any reason a student chooses to miss school for reasons of family vacations, or extra- and co-curricular activities, this student will be diligent and prompt in catching up to his or her classmates. Therefore any missed information, assignments, and/or assessments will not be the responsibility of the teacher, but of the student.

Parents and/or guardians should be aware that Highwood does not condone, encourage or tolerate any extended absences by students. If a student chooses to miss class repeatedly, disciplinary action may apply.

**Classroom Etiquette**

1. **Please ask to use cell phone or iPods.**
2. **Do not bring junk food or lunches to class.**