



Sturgeon Composite High School

Science 20

COURSE OUTLINE



PREREQUISITE: *Science 10 – minimum mark recommended 55%*

TEXT: *Science 20*

COURSE MATERIALS: *Calculator* *Three ring binder*
 Duo tang *Data book (provided)*

COURSE CONTENT: *Science 20 consists of four units of study:*

UNIT A: CHEMISTRY (25%)

Students will:

1. *investigate aqueous solutions to determine conductivity and to calculate concentration.*
2. *explain oxidation, reduction and spontaneity and apply this knowledge to voltaic and electrolytic cells and to industrial processes.*
3. *describe the properties of simple hydrocarbons and describe hydrocarbon-based industrial processes that are important in Alberta.*

UNIT B: PHYSICS (25%)

Students will:

1. *describe one-dimensional motion of objects in terms of displacement, time, velocity and acceleration.*
2. *describe and analyze the law of conservation of momentum for one-dimensional collisions and change in momentum (impulse) to explain how force affects motion.*

UNIT C: GEOLOGY (25%)

Students will:

1. *analyze the scientific evidence and explanations for geologic phenomena that occurred long ago or are taking place over a long period of time.*
2. *analyze and assess the evidence to explain the theory of plate tectonics and the internal structure of Earth.*
3. *analyze and assess the evidence provided by the fossil record of change in the environment and life forms over a period of 3.5 billion years.*
4. *analyze the evidence of, and assess the explanations for, natural variations in Earth's climate over the last two million years.*

UNIT D: BIOLOGY (25%)

Students will:

1. *analyze ecosystems and ecological succession in the local area and describe the relationships and interactions among subsystems and components.*
2. *analyze and investigate the cycling of matter and the flow of energy through the biosphere and ecosystems as well as the interrelationship of society and the environment.*
3. *analyze and describe the adaptation of organisms to their environments, factors limiting natural populations, and evolutionary change in an ecological context.*

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EVALUATION: *The final mark in Science 20 will be based upon the following:*

TERM WORK: 60%

1. **EXAMS** (40% of each unit mark)
 - unit exams, tests, lab tests
2. **ASSIGNMENTS/QUIZZES** (35%)
 - individual student check, teacher evaluation
 - done / not done (attitude/effort)
 - notebook
 - teacher or student evaluation
3. **LABS** (25%)
 - labwriteups
 - process skills
 - done/not done (attitude/effort)
4. **RESEARCH SKILLS**
 - accessing information
 - comprehension of information
 - summarizing skills
 - utilization of a variety of sources of information (texts, videos, films, etc.)

FINAL EXAM: 40%

- cumulative exam of all course material

OVERALL MARK IN THE COURSE IS A BLEND OF THE TEACHER ASSIGNED MARK AND THE FINAL EXAM MARK.

BEHAVIORAL EXPECTATIONS: *All students and staff are expected to treat each other with respect.*