

Teacher Name: *Elise Ahern-Davy*

Subject: *Secondary 4
Science*

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Course Code: *555-444*

Course Description:

The secondary four science course covers topics related to various branches of science and technology and has been divided into four areas: The Material World, The Earth and Space, The Living World, and The Technological World.

Course Content:

| Term 1: August 30 th – November 4 th | | 20 % of year |
|--|---|---|
| Content | Timeline (Dates) | Evaluation Methods |
| The Material World ORGANIZATION OF MATTER <ul style="list-style-type: none"> • Atoms and elements • Rutherford-Bohr atomic model • Lewis Notation • The periodic table PHYSICAL PROPERTIES OF SOLUTIONS <ul style="list-style-type: none"> • Concentration • Electrolytes • Electrolytic dissociation • pH scale • Ions • Electrical conductivity CHEMICAL CHANGES <ul style="list-style-type: none"> • Conservation of mass • Balancing chemical equations • Neutralizations • Combustion • Photosynthesis and cellular respiration • | <p align="center">September 2022</p> <p align="center">October 2022</p> <p align="center">October-November 2022</p> | <p>Students will receive a mark in each of the following competencies: practical (lab) and theory.</p> <p>The practical competency is worth 40% of the student's term mark. Students are evaluated on work they produce during lab activities in the form of products, observations, and reports.</p> <p>The theory competency is worth 60% of the student's term mark. Students are evaluated based on the following weighting:</p> <p>Assignments: 25% Tests and quizzes: 35%</p> |
| Term 2: November 7 th – February 3 rd | | 20 % of year |
| Content | Timeline (Dates) | Evaluation Methods |
| TRANSFORMATION OF ENERGY <ul style="list-style-type: none"> • Types of energy • Law of conservation of energy • Energy Efficiency ELECTRICITY <ul style="list-style-type: none"> • Electrical charges • Static electricity • Ohm's Law | <p align="center">November 2022</p> <p align="center">December 2022-January 2023</p> | <p>Students will receive a mark in each of the following competencies: practical (lab) and theory.</p> <p>The practical competency is worth 40% of the student's</p> |

| <ul style="list-style-type: none"> Relationship between power and electrical energy Electrical circuits <p>ELECTROMAGNETISM</p> <ul style="list-style-type: none"> Forces of attraction and repulsion <p>Magnetic field of a livewire</p> | <p>January 2023</p> | <p>term mark. Students are evaluated on work they produce during lab activities in the form of products, observations, and reports.</p> <p>The theory competency is worth 60% of the student's term mark. Students are evaluated based on the following weighting:</p> <p>Assignments: 25% Tests and quizzes: 35%</p> |
|---|--|---|
| <p>Term 3: February 6th – June 22nd</p> | | <p>60 % of year</p> |
| Content | Timeline (Dates) | Evaluation Methods |
| <p>LITHOSPHERE</p> <ul style="list-style-type: none"> Minerals and rocks Soil horizons Permafrost Energy Resources <p>HYDROSPHERE</p> <ul style="list-style-type: none"> Watersheds Oceanic circulation and salinity Cryosphere (glaciers and pack ice) Energy Resources <p>ATMOSPHERE</p> <ul style="list-style-type: none"> Composition and circulation Greenhouse Effect Energy Resources <p>BIOGEOCHEMICAL CYCLES</p> <ul style="list-style-type: none"> Carbon cycle Nitrogen cycle <p>Tech World</p> <p>MATERIALS</p> <ul style="list-style-type: none"> Constraints Characteristics of mechanical properties Types and properties (plastics, ceramics, composites) Modification of properties <p>MECHANICAL ENGINEERING</p> <ul style="list-style-type: none"> Characteristics of linking of mechanical parts Guiding controls | <p>February 2023</p> <p>February 2023</p> <p>February 2023-March 2023</p> <p>March 2023</p> <p>March-April 2023</p> <p>April –May 2023</p> | <p>Students will receive a mark in each of the following competencies: practical (lab) and theory.</p> <p>The practical competency is worth 40% of the student's term mark. Students are evaluated on work they produce during lab activities in the form of products, observations, and reports.</p> <p>The theory competency is worth 60% of the student's term mark. Students are evaluated based on the following weighting:</p> <p>Assignments: 25% Tests and quizzes: 35%</p> |

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| <ul style="list-style-type: none"> • Construction and characteristics of motion transmission systems (friction gears, pulleys and belt, gear systems, sprocket wheels and chain, wheel and worm gear) • Construction and characteristics of motion transformation systems (screw gear, cam and follower, rack and pinion, slider-crank) <p>ELECTRICAL ENGINEERING</p> <ul style="list-style-type: none"> • Power supply • Conduction, insulation and protection • Controls | <p>May 2023</p> | |
| <p>RESOURCES USED:</p> | <p>Observatory: The Environment Second Year of Secondary Cycle Two</p> | |
| <p>Final Exam</p> | | <p>20% of year</p> |

Course content & timelines may be adjusted as the year progresses to meet the needs of the students

Communication:

Students will be provided with a minimum of 4 communications throughout the school year.

- October 15th – Progress report
- November 20th – 1st term report card
- March 15th – 2nd term report card
- July 10th – Final report card

General Information

Classroom Expectations: In order for each student to feel safe and comfortable in the classroom, a respectful attitude is expected of all. This includes respecting one another, the classroom environment, and everyone’s right to learn. Students are expected to arrive to class on time and with all necessary materials. Students are expected to take an active role in their learning by participating in lessons and asking questions when clarification is needed. Students are expected to follow all school rules inside of the classroom.

Absences: Students are responsible for finding out what they have missed should they be absent. Students are responsible for getting materials (notes, assignments, etc...) that they have missed from the designated folder in the classroom or myself. Should a student miss an evaluation (lab, quiz, test, etc...) due to an absence that has been justified by a parent or guardian, they will be given an opportunity to make up the evaluation in the format of the teacher’s choosing.

Laboratory Safety: Students are expected to follow the general laboratory safety procedures at all times. Students will be instructed on proper laboratory safety procedures and safety rules will be posted in the lab as a reminder of appropriate behaviours and precautions to take when working in the lab. When they use instruments, tools or machines, students are expected to be aware of the applicable safety standards and work carefully in the lab. When in doubt, they should ask the teacher or technician to confirm that they are working safely or that they are using materials properly.

Laboratory Equipment: Students are responsible for the equipment that they use. If equipment is intentionally broken or damaged or damaged as the result of inappropriate lab behaviour, the student is responsible for replacing it or paying the replacement fee.