Enseignement Scientifique - Integrated Science

1ere (11th Grade FB) *[1 period per week]*

Mr. Julien Riviere

Course Description

The goal of this class is for students to acquire general cognitive skills and knowledge in experimental sciences (Biology, Geology, Physics and Chemistry) and Mathematics and to prepare them for the baccalaureate exam and post-secondary studies in these subjects.

Knowledge content in each part will be constructed by the students themselves as often as possible through guided document and data analysis and/or practical activities, allowing them to acquire reasoning and technical skills and develop a sense of self-efficacy, initiative and autonomy. Reflection is a key component in the learning process and will be evident throughout the program to facilitate evaluation and progress as a learner. Metacognition empowers students to distinguish between opinion, beliefs and scientific constructs and their interplay in the production of knowledge. Skills mobilized in this class are embedded in 3 main educational outcomes:

- Understanding the nature of scientific knowledge and its methods of construction: students will learn to associate each scientific concept and skill to its nature and process of construction.
- Identifying and implementing scientific practices: each time students will practice a scientific approach, they will explicitate its epistemological properties
- Identifying and understanding the effects of Science on societies and the environment: students will understand why developing a general scientific culture is fundamental to grasp and control the evolution of societies and the environment.

Timeline

Part 1: A long history of matter / 16 hours (8 weeks).

Part 2: The Sun, our source of energy / 14 hours (7 weeks)

Part 3: The Earth, a peculiar object / 12 hours (6 weeks)

Part 4: Sound and music, carriers of information / 16 hours (8 weeks)

Part 5: Experimental and numerical project / 12 hours (6 weeks)