**Grade 12 – Science – Course Selection Recommendations**

**Goal**: Provide you with the necessary information to allow you to make an educated decision on which of the sciences to take next year.

**Analytical Based Sciences** *(Physics, Chemistry and AP Chemistry)*

1. **Why study the Analytical Based Sciences?**
   1. Are you interested in the natural laws and processes that affect and shape manufacturing, medicine, energy and so much more?
   2. Do you like to analyze problems and synthesize solutions?
   3. Do you like being challenged?
2. **Skills and Attributes required for success?**
   1. A willingness to persevere through complex problems that often involve mathematical principles.
   2. A strong interest in problem solving
   3. A good working memory.
   4. An interest in laboratory investigations and experimentation
3. **Suggested Pre-Requisite Courses and Achievement?** *(Pre-requisites are dependent on chosen course)*
   1. Physics 11 – 67% (recommended)
   2. Chemistry 11 – 67% (recommended)
   3. Chemistry 11H – 60% (recommended)
4. **Suggested Co-Requisite Courses (it is suggested that students enrol in a minimum of 2 of the following courses in their grade 12 year)**
   1. Pre-Calculus 12 (preferred)
   2. Foundation Math 12
   3. A second grade 12 science of your choice
5. **Who employs Chemists and Physicists?**
   1. *Chemistry*

* Computers and telecommunications
* Pharmaceutical companies
* Hospitals & other medical organizations
* Aerospace industry
* Mining and metallurgy companies
* Oil and gas companies
* Environment Sustainability sector
  1. *Physics*
* Aerospace industry, Airports
* Communications technology industry
* Energy Development companies
* Environmental and Pollution control
* Information Technology industry
* Manufacturing companies
* Military
* Aerospace industry

1. **Have questions…reach out in person or through MS Teams:**
   1. Mr. Krahn *(Physics 12)*
   2. Mrs. Dennis *(Chemistry 12)*
   3. Mr. Jennens *(AP Chemistry)*

**Knowledge and Understanding Based Sciences** *(Anatomy and Physiology)*

1. **Why study the Knowledge Based Sciences?**
   1. Do you like to understand how animals and organisms work?
   2. Are you interested in how life evolves and how our body works?
   3. Are you interested in achieving a deeper understanding of the materials and processes that shape our planet?
2. **Skills and Attributes required for success?**
   1. A good working memory.
   2. Interest in scientific vocabulary and terminology
   3. An appreciation of how processes are interconnected, (living and non-living systems).
3. **Suggested Pre-Requisite Courses and Achievement?** *(Pre-requisites are dependent on chosen course)* 
   1. Life Sciences 11 – 67% (suggested)
   2. Environmental Science 11 – 67% (suggested)
   3. Chemistry 11H – 67% (suggested)
   4. Chemistry 12 or Physics 12 – 67% (suggested)
4. **Employment Opportunities?**
   1. *Anatomy and Physiology 12*
      * health sciences
      * geology
      * oceanography
      * environmental science
      * agricultural sciences
      * horticulture
      * genetic engineering
      * food science
5. **Students wishing to enroll in Anatomy and Physiology 12, *(without having completed Life Sciences 11)* directly should**

* be mentally mature and ready for the huge jump in difficulty in terms of content and volume,
* must meet with Anatomy and Physiology 12 teacher (Mrs. Noakes) to discuss (i.e. recommendation of teacher is needed before acceptance is granted).

\*\*\* **bypassing Life Science 11 has often resulted in underachievement in Anatomy and Physiology 12.** Without the overlapping competencies associated with Life Science 11, students are at a disadvantage during the 1st half of semester.

1. **Have questions…reach out in person or through MS Teams:**
   1. Mrs. Noakes/Mrs. Small (Anatomy and Physiology 12)

**Applied Sciences** *(Astronomy)*

1. **Why study the Applied Sciences?**
   1. Does understanding the vastness of space and the origins of the universe give us a sense of our place in the cosmos?
   2. Are you interested in exploring the origins of the universe and interactions of celestial bodies.
2. **Skills and Attributes required for success?**
   1. Willingness to participate in project-based work.
   2. Willingness to work outdoors in various climates, (rain or shine).
   3. Willingness to work with a diverse group of individuals.
3. **Suggested Pre-Requisite Courses and Achievement?**
   1. Science 10 – Pass
   2. Foundations | Pre-Calc 10 – 60% (min) **(Astronomy)**
4. **Potential Career Paths**

* **Science Communicator or Writer**
* **Planetarium Worker**
* **Aerospace Industry**
* Observatory Scientist

1. **Have questions…reach out in person or through MS Teams:**
   1. Mr. Ocampo *(Astronomy 11/12)*