



***Prerequisite:*** Registered in a Chemistry/Biology/Physics/Math AP Course

---

The one-of-a-kind FIRST (Focus in Research, Science and Technology) program is an innovative enrichment program aimed at those with a genuine interest in science and technology. This course is designed for those who thrive in an accelerated classroom, are accomplished independent learners, and work well in collaborative academically challenging settings. This course is meant to provide students an opportunity to explore the classical pure streams of Science (Biology, Chemistry, and Physics) and other Applied Sciences as well as engineering, computer science and advanced technologies.

**Course Objectives:**

- Gain additional knowledge in Science, Mathematics, and Engineering through an exploratory team research approach.
- Provide students with superior skill sets in: measurements, lab equipment use, graphing, calculating, basic electronics skills and other common skills required at the post-secondary level.
- Hands on learning and problem solving activities where students have the opportunity to develop creative solutions to engineering and science related projects. Emphasis will be put on collaborative group work.
- Offer an alternative option for grade 12 students who have a keen interest in exploring the world around them.
- Opportunity to explore various career pathways in the fields of Science and Engineering.

***Course Format and Assessment:***

The FIRST Discoveries 35 course is a 5 credit option course made up of four main units:

- Unit A: Introduction to Engineering and Design including the basic requirements to become an engineer in Alberta Learning **20%**
- Unit B: Teacher directed or student initiated small projects **20%**
- Unit C: Final Project **30%**
- Unit D: Workstation Habits, including journal **30%**

Strict adherence to safety procedures, protocols, and behaviors is a mandatory component of the programme. This reflects the perspective the career professional working aspirations of those taking the programme, and, more importantly, the health and safety of all participants. **Failure to comply with safety procedures, protocols, and behaviors will be reflected in grading and can lead to losing shop and laboratory privileges.**

Specific activities, labs and projects are subject to change depending on class progression, interest, and available resources.

Students will demonstrate mastery of course objectives through a variety of projects, laboratory experiments, presentations, and skill tests. Furthermore, student's productivity, creativity, organization, team work, responsibility and respect towards peers and equipment will also play a part in determining their final grade. These skills are central to fostering the type of learners required to be successful in a post-secondary setting as well as the workplace.

Certain tasks/assessments will be based upon a pass/fail criterion while others will be evaluated based upon a rubric that students will receive prior to their final assessment.

In general, projects, assignments, presentations, skill tests, and laboratory experiments will make up the majority of the course grade. Workstation/laboratory attributes (productivity, creativity, organization, team work, responsibility, respect, and citizenship) will make up 30% of the course.

**Course Materials:**

The majority of resources that students will need will be supplied by the school. However, each student should bring the following to each class:

- Lined, blank, and graph paper
- A bound notebook (coiled notebook is also sufficient, but a bound notebook is best)
- Appropriate clothing for laboratory and workshop work (i.e. closed toe shoes, hair tie for long hair, etc. – this will be discussed in the course)
- Calculator
- Ruler
- Coloured pens/pencils (black and blue pens are desirable, but not required)
- Eraser

The following are items that students may wish to bring, but are not required:

- Smart Phone
- Camera
- Laptop computer
- Headphones

**Parents/Guardians:**

Please sign below to indicate that you are now informed about your son or daughter's FIRST Discoveries 35 course. The **course outline and introduction letter are for you to keep**. Please have your son or daughter bring this section back to class to indicate that they have also shown you the course outline and introductory letter. Thank you!

Student's Name: \_\_\_\_\_

Parent(s) Name: \_\_\_\_\_

Parent(s) Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Comments/Questions: