

## FIRST Discoveries 20

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W. P. Wagner Science Site QR Code

**Prerequisite:** 80%+ Science 10AP/FIRST and 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) 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 11 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:***

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

### ***Assessment:***

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.

- Unit A: introductory challenges. **20%**
- Unit B: Teacher directed or student initiated small projects **20%**
- Unit C: Workstation Habits, including journal **30%**
- Final Project **30%**

### **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) Please use your 10 book if you still have it.
- 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/Tablet
- Headphones

**Parents/Guardians:**

Please sign below to indicate that you are now informed about your son or daughter's FIRST Discoveries 20 course. Please have your son or daughter bring this section back to class to indicate that they have also shown you the course outline, introductory letter and acknowledge that they will be using power tools and shop equipment. Thank you!

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

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

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

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

Comments/Questions: