# Electronics 11/12 Course Outline

## Objectives

The main objective of this course is to have the student gain knowledge in the understanding of the world of electricity and electronics. Students will learn, in detail, about the different components that are used in electronics devices, develop high level skills in making circuit boards using computer software, the correct use of test equipment, programming microprocessors, house wiring and building of quality projects. This is a hands-on course that is based on labs, theory and projects.

## Student Responsibility

- Always work safely in the shop. **SAFETY FIRST!**
- If an accident occurs report it to the teacher immediately.
- If a computer, tool or piece of equipment is broken report it to the teacher immediately. DO NOT swap mice and/or keyboards if they are missing or damaged at your work station. Let the teacher know immediately.
- NO GAMES, FACEBOOK, TEXTING, etc. This class is for learning, NOT zoning out or social networking. Computer privileges will be revoked if these begin to interfere with your learning. If you cell phone becomes an issue it will be locked in my office for the class.
- Listening to personal music is accepted as long as NO teacher instruction is taking place.
- NO FOOD or DRINKS are allowed near the computers.
- Arrive to class and on time. Consequences will be given if this becomes an issue.
- If you are absent, it is your responsibility to make-up missed work.
- ALL notes, labs, assignments, etc will be posted on the Website. https://portal.sd71.bc.ca/public/orwtkn24njrxs2dpnaxgez3fnfyxozlc/Pages/default.aspx
- A drawer for your lab and project materials will be supplied for you. Please ensure it is locked when you leave class.

## Labs

- These will be completed throughout the course. The labs will be completely hands on activities. They will be given at specific points in the course to help students become familiar with components, principles, and usage of test equipment.
- Basic breadboarding components, house wiring, resistor colour code, capacitor identification, integrated circuits, DC power supply and an introduction to programming microprocessors using Arduino will also be covered.
- All lab work will be marked.

- **Mr. Claassen**
- **Spring 2017**

## Theory

- This will be given throughout the course. The lessons will be both formal and informal. All lessons will be directly related to the hands on approach that this course is based on.
- Topics such as electronic component use, ohms law, series/parallel circuits, electronic and electrical theory will be covered to enhance lab and project understanding.

## Projects

- The student will be given the choice of several projects, based on interest, experience and skill level to build. Each project will have to be breadboarded, then a circuit board will be designed and finally a case will be built. Each project has its own unique design challenges. Students will use the knowledge gained from labs and tutorials to produce a “HIGH” quality looking final project. The student will use 3d design software and the laser engraver or 3d printer as part of their projects.

## Marking

| | |
|---|---|
| Project work | 40% |
| Breadboarding and Electrical Lab work | 40% |
| Assignments/Theory/Quizzes | 20% |

## Cleanup

Cleanup is called about 5 minutes prior to the end of the class. It is important that all students put away their own equipment and clean up their work area. No student is permitted to open the door or leave until all the tools are accounted for. When the teacher is satisfied with the cleanup, you will be dismissed.