



# Loyola

## HIGH SCHOOL

### Secondary 3 Introduction to Engineering Course Outline

**Teacher:** Mr. C. Hannan

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**Required Materials:** Non-programmable calculator  
Geometry set  
12" / 30 cm ruler with both imperial/metric units  
iPad (stylus if desired)

#### Course Information:

The general objective of the secondary three introduction to engineering course is to introduce students to the engineering design process, as well as the fields of drafting, structural and mechanical engineering. Students engage in the design and construction of prototypes and learn to appropriately build connections between moving and non-moving parts. Projects include building structures, vehicles and robots. The course is STEM (science, technology, engineering & mathematics) and project-based, with emphasis on critical thinking, problem solving, creativity, communication and collaboration. There is a strong hands-on laboratory and advanced software focus in the course. As there is no textbook, students will be encouraged, in groups and independently, to explore and research topics using available literature and the course website resources.

#### Evaluation:

The course makes use of Project-Based Learning (PBL) for the acquisition of content. As such, both the process and the product of the project are evaluated.

For each project:

Project Log Notes (group mark)	20%
Content Quizzes (individual mark)	20%
Design Portfolio (individual mark)	20%
Final Project Artefact (group mark)	20%
Peer-Self-Teacher-Reflection (individual mark)	20%

There will be 1 to 2 projects per term for a total of 5 to 6 projects for the year. For terms with 2 projects, each will count equally for the final term grade.

In terms of the total grade for the year, the first term has an overall value of 20%, the second term 20%, and the third term 60%.

### **Extra Help / Office Hours:**

Extra time in the laboratory to complete projects is available on an as-need basis. The teacher is available most lunch hours. Students may contact the teacher directly by email to determine a mutually convenient time for extra help or extra time.

### **Technology:**

As the course content is delivered via Google Classroom, a sufficiently charged iPad is required for all classes. Students must check the website and their school email daily.

The iPad is a learning tool that significantly enhances the classroom experience when used appropriately. Students are required to follow the Acceptable Use Policy.

### **Homework / Late Policy:**

There is no assigned homework within the framework of the class, with two exceptions:

1. If a student is absent, they are required to make up lost time by the next class.
2. If a student falls significantly behind, they may be asked to make up the time under certain circumstances.

Late projects may be submitted by the beginning of the class after they are due at a penalty of 20%. Projects submitted after that time shall receive a mark of zero.

