

# Villanova Junior High

## Grade 8 Technology Education - Control Module

Teacher: Mr. Walsh - Room 111

The **Grade 8 Control Technology** course is the third of five modules (unit of instruction) to be delivered at the Intermediate level. Its primary strategy will be to engage students in the design, development, management, and evaluation of technological systems as solutions to problems.

### Unit 1: Big Ideas (Knowledge)

The purpose of the big ideas section is to provide students with an introduction to the ideas, terminology and concepts covered in the module. In this section, students will develop knowledge of the following topics:

- **Topic 1:** Control Systems - An Introduction
- **Topic 2:** Fluidic Control Systems
- **Topic 3:** Electronic Control Systems
- **Topic 4:** Robotics
- **Topic 5:** Programming and Interfacing
- **Topic 6:** Control System Safety
- **Topic 7:** Careers in Control Technology

### Unit 2: Basic Skills

The purpose of the basic skills section is to provide students with an introduction to the basic tools and techniques to be employed throughout the remainder of the module's implementation.

- **Topic 1:** Interpretation of Simple Schematics and Pictorials
- **Topic 2:** Programming and Interfacing
- **Topic 3:** Development of Simple Control Technology Systems
- **Topic 4:** Troubleshooting

### Unit 3: Design Activity (D.A.)

The purpose of the Design Activity unit is to provide students with experience designing and fabricating a control technology system. Students will develop capability with the design process for developing technical solutions by employing the fundamental processes associated with control technology systems. Topics include:

- **Topic 1:** The Design Team and The Design Portfolio
- **Topic 2:** Identification of the Problem Situation (Step 1)
- **Topic 3:** Development of the Design Brief (Step 2)
- **Topic 4:** Investigation and Research (Step 3)
- **Topic 5:** Identification of Possible Solutions (Step 4)
- **Topic 6:** Selection of the Best Solution (Step 5)
- **Topic 7:** Development of the Solution (Step 6)
- **Topic 8:** Evaluation of the Solution (Step 7)
- **Topic 9:** Presentation of the Report (Step 8)

Evaluation (in-class assignments, digital portfolio, projects and participation)

**Unit I: Big Ideas 20%**

**Unit II: Basic Skills 20%**

**Unit III: Design Activity (60%)**

- **Design Process 6%**
- **Design Portfolio 24%**
- **Solution 18%**
- **Report 12%**