

## **Manufacturing Technology, Grade 12 – Workplace Preparation TMJ 4E0**

This course enables students to further develop knowledge and skills related to design, process planning, control systems, project management, quality assurance, and business operations. Students will use a broad range of tools and equipment, enhance their skills in computer-aided design, and collaborate in managing a project. Students will critically analyse and solve complex problems involved in manufacturing products. Students will expand their awareness of environmental and societal issues and of career opportunities in the manufacturing industry.

- Plan in collaboration with others a detailed manufacturing process for production.
- Apply scientific concepts to manufacturing related processes.
- Use reverse engineering to explain existing products or processes in terms of function.
- create, in collaboration with others, a product or process prototype/model
- operate computer numerical control equipment (e.g., CNC milling machine, CNC lathe, CNC plasma cutter)
- assess the effects of emerging manufacturing technology industries on culture and society
- Create projects such as flashlights, cell phone cases, Turner's cube, welding design, key chains, engraving, air powered engines, etc.

**Prerequisite:** Manufacturing Technology, Grade 11, Workplace Preparation (TMJ 3E0)