

## **Technology Education**

### Grade Seven Manufacturing 0613 Course Outline

Teacher: Mr. Annetts

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Industrial Arts Room McCreary

**Prerequisites** – There are no prerequisites for this course.

#### **Required Materials**

- Pen and Pencil
- Small notebook or binder with paper

#### **Course Description**

The grade seven program is an introductory program designed to introduce the student to a variety of technologies and processes. It is a “hands on” program with the students “learning by doing” and with the students becoming an active member of the learning process. In all areas of the program, re-enforcement of the academic subjects, including math, science, computer applications and communication are emphasized.

#### **Objectives:**

Students will:

- Safely use the basic power tools and equipment along with the cnc laser, 3 d printer and the cnc router.
- Accurately use rulers and tape measures to layout projects.
- Use finishing techniques to complete the projects.
- Develop and use problem solving skills.
- Develop and use teamwork skills.

#### **Assessment**

- The objectives will be taught throughout out the term and on an ongoing basis. Ongoing evaluation of shop practices and equipment usage will be 30 percent of the mark and the project evaluation will be 70 percent of the mark. This is subject to change or adjustment depending upon the situation of each student and class. Rubrics are used for the evaluations.
- Students who do not finish a project will be marked on its level of completion. Extra time to complete projects will not be allowed if the student has not been diligently working through the term.

#### **Behavioral Assessment**

Students will be assessed as per the guidelines from the Manitoba provincial report card, in the areas as follows:

#### **Personal Management Skills**

- Organizes material, uses class time productively, works independently, completes all work on time, persists when faced with challenges, seeks help when needed, demonstrates a strong work ethic, shows patience, demonstrates on-task behavior, sets personal management goals

### **Active Participation in Learning**

- Shows interest, asks questions, takes initiative, self-assesses work quality based on criteria, uses feedback to improve learning, uses criteria to provide feedback, uses a variety of media for communication, investigates questions, hypothesizes, analyzes

### **Social Responsibility**

- Works and interacts well with others, is welcoming and positive, shares resources and equipment with others, respects school values, respects and follows classroom routines, takes an equitable share in group work, is courteous, respects the need for safety, sets personal management goals

## **Units/Components**

### Woods introductory Product

- Basic power equipment is introduced such as the band saw, stationary reciprocating sander, drill press, etc. Through the development of their project the students are exposed to safety issues, measuring exercises, finishing techniques and general woodworking skills. Also the students will be using the cnc machines available in the shop.

### Problem Solving Activity (Depending on time availability)

- An example of this exercise, the students work in teams to develop a “cyborg” mask. Using light emitting diodes, basic wiring and teamwork, they must develop a plan to navigate through a complicated maze and select a prize. The catch is that one student is masked, and the other student must navigate him or her through the maze without any verbal commands. The only communication is through Light Emitting Diodes inside the mask, which are controlled by the unmasked student through a switching system that the team develops. Problem-solving, teamwork and communication skills development are a main focus of this activity.

### Transportation Technology (Depending on time availability)

- In this unit, the history of transportation development and advancement is covered. Different types of transportation systems including land, water, air intermodal, space and non-vehicle systems are explored. A “hands on” activity of this area includes the construction of rockets, which are fired at the conclusion of the unit. Basic hand tools and power equipment are used in the construction, along with the computer for the design of the graphics contained on the rocket.

## **Course Scheduling**

As there is an exhaustive list of skills and techniques covered in the shop class a defined schedule with time allotment is not possible. As the need arises with each individual student's project development, new concepts are introduced along with techniques using the equipment to fulfill that stage of its development.

## **Resources**

- Shop supplies
- Online Information
- Videos

## **Cell Phone Policy**

Cell phones are not to be used in the shop unless it is specifically at the direction of the teacher and only for schoolwork.

## **Absenteeism and Late Policy-** As per school policy.

As this is a “hands-on” course, students being late and or absent make it very difficult to complete the objectives. Most equipment demonstrations and new work are covered at the beginning of each class, and are very time consuming to reteach to one individual student without compromising the safe supervision of the remaining class. Students are expected to arrive to class on time, with the proper materials, ready to learn. The belief of this instructor is that the best learning comes from “learning by doing” and the program is designed to represent this belief.

## **Extra Help**

The shop is usually open at noon hour and after school for those students needing extra help for students missing class due to a legitimate reason. This option is not be available to students who are not working steady during their regular shop class.

## **Homework Policy**

Very little, if any homework is assigned in this class. If a student is working steady in the shop, there will be no need to have homework.

## **General Rules**

1. Operate tools and equipment only after receiving permission.
2. Report all accidents-even minor cuts to the instructor immediately.
3. Always wear suitable eye protection, tuck in loose clothing and keep long hair in place.
4. “Horseplay” of any kind is a severe violation of expected behavior and will result in withdrawal of privileges in this class. Careless attitudes and failure to observe safety precautions will result in the same action.
5. Report any defective tools or machines immediately to myself.
6. Do not attempt to use any tool or machine if you have the slightest doubt of what you are doing. Know exactly how and what you are doing before doing it. Always consult the instructor when in doubt.
7. No food or drink is allowed in the shop area unless given permission.
8. Always know the procedure and route for leaving in case of fire.
9. It is the responsibility of everyone to clean up the entire shop before the class is dismissed.
10. No student is allowed out of the room without the instructor’s permission.
11. The school’s late policy will be in effect for students arriving late to class.

12. No student is allowed to **prevent the teacher from teaching** and other **students from learning**. Students **will** be removed from the class if they are fooling around.

\*\* This course outline and the evaluation breakdown may be subject to change. \*\*

Please sign and return the following form, indicating that you have read and understand the course and classroom expectations.

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

Student's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Parent's Names: \_\_\_\_\_

Contact Phone number \_\_\_\_\_

Parent's Signature: \_\_\_\_\_ Date: \_\_\_\_\_