



## COURSE OUTLINE

### INTRODUCTION

The Drafting 10 course meets the general aims of the Technology Education curriculum.

[https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/10-12/adst/en\\_adst\\_10\\_drf.pdf](https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/10-12/adst/en_adst_10_drf.pdf)

### BIG IDEAS AND GENERAL LEARNING OUTCOMES

User needs and interests drive the design process.

Social, ethical, and sustainability considerations impact design.

Complex tasks require the sequencing of skills.

**Understanding Context:** Engage in a period of **research** and **empathetic observation** in order to understand design opportunities.

**Defining:** Identify insights from research, a design issue, potential users, relevant contextual factors in the design space, criteria for success, intended impact, and any constraints.

**Ideating:** Take risks in generating ideas. Add to others' ideas in ways that enhance them. Screen ideas against criteria and constraints. Critically analyze and prioritize competing factors, including social, ethical, and sustainability considerations, to meet community needs for preferred futures. Choose an idea to pursue, keeping other potentially viable ideas open.

**Prototyping:** Identify and use sources of inspiration and information. Choose a form for prototyping, Develop a plan/pictorial drawings, sketches, flowcharts, etc. that includes key stages and resources. Evaluate a variety of materials for effective use and potential for reuse, recycling, and biodegradability, Prototype, making changes to tools, materials, and procedures as needed, Record iterations of prototyping.

**Testing:** Identify sources of feedback. Develop an appropriate test of the prototype. Conduct the test and collect and compile data. Evaluate data and decide on changes. Make the prototype or abandon the idea.

**Making:** Identify and use appropriate tools, technologies, materials, and processes for production. Make a step-by-step plan for production and carry it out, making changes as needed. Use materials in ways that minimize waste.

**Sharing:** Decide on how and with whom to share: (may include showing to others, use by others, giving away, or marketing and selling the product and processes.) Demonstrate the product to potential users. Provide a rationale for the selected solution, modifications, and procedures, using appropriate terminology. Critically reflect and evaluate the design thinking process and the success of the product. Identify how the design ideas contribute to the individual, family, community, and/or environment. Identify new design issues. Evaluate the ability to work effectively both as individuals and collaboratively in a group, including the ability to share and maintain an efficient co-operative work space. Identify new design issues

**Applied Skills:** Identify the skills and skill levels needed, individually or as a group, in relation to specific projects, and develop and refine them as needed: Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments.

**Applied Technologies:** Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks: Evaluate the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use. Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies

### COURSE CONTENT: REQUIRED LEARNING OUTCOMES

#### 1. Drawing Techniques, Standards and conventions

- Tool use, proper board set-up, template use, care and storage of projects and equipment
- Drafting standards including: Lettering, numbering, Line styles, types and thickness's,

dimensioning, scaling, imperial vs. metric measurement.

## 2. Project Development and Design Opportunities

- Sketching, Mechanical Drawing, Perspective Drawing (1 and 2 point), Tracing, Multi-View Drawings, Isometric, Oblique, Auxiliary, Sectional Views (advanced), Geometric construction.

## 3. Computer Aided Drafting

- VectorWorks and SketchUp programs: page/template setup, preferences, tool use, pallettes.
- Project development: sketching, line thickness, dimensioning, mechanical drawings,
- Three Dimensional Rendering of Architectural Drawings and Mechanical Drawings.

## 4. Model Making CAM

- 3D generation: design, modelling and production of 3D object using the 3D printer.
- Logo and small scale model making (Styrofoam/silkscreen: time/availability dependant.)

## STUDENT LEARNING ACTIVITIES

- Students will participate in general theory lessons, group activities, and individual work.
- Project work will include: Hand Drawing, Computer Aided Design and Model Making

## ASSESSMENT & EVALUATION

1. Theory - 15% - Quizzes, assignments, dedicated notebook.
2. Practical Work - 70% - Projects, design portfolios
3. Social Responsibility 15% clean-up habits, accountability, **student service**

Teacher and Personal Self-Evaluations/Assessments are used to evaluate your ability to work effectively as an individual and collaboratively in a group, including your ability to share and maintain an efficient co-operative work space. You will be expected to reflect on your designs/projects with marking criteria.

## EXPECTATIONS

**Lab Equipment** - Before using equipment, computers, tables you must **be instructed how to use them** appropriately. Any damage caused due to negligence/neglect, or improper use will be **charged to the student**. All books/equipment must remain in the lab.

**Attendance** - This is an APPLIED course, **ATTENDANCE IS MANDATORY**

**Project Completion** - Open shop times are a privilege. It is expected that students who are behind in their work will attend open shop periods.

**\*\* ALL PROJECT WORK MUST BE COMPLETED IN ORDER TO PASS THE COURSE \*\***

**Clean-up** - All students are expected to actively participate in clean-up

**Notebook** - A **notebook** and a **pencil** and an **eraser** must be brought to **every** class

## EQUIPMENT AND MATERIALS


**Projects** All materials and special equipment not covered in the course fee, and materials required for extra credit project work must be paid for by the student. Example: Model kits.

## PARENT/GUARDIAN ACKNOWLEDGEMENT

I have read this course outline. I am aware of the course content, policies, expectations, student activities, evaluation procedures, and approximate costs.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Parent Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Tutorial Time and Schedule:** 

Tutorial Time is available each day from 8:30 AM – 9:30 AM for those students that require extra time or help to finish projects and coursework. This time can also be used for special setups on tooling as required.

Please Note: Tutorial Time should be pre-arranged with the teacher upon request by either the teacher or the student.