

Mayerthorpe Junior Senior High School

Course Outline

Semester 1

2023-24



**CTS: Construction Technologies
Fabrication Technologies**

**Teacher: Mr. Hansen
Telephone: 780-786-2624
E-mail: mark.hansen@ngps.ca**

Student Discipline and Consequences

Students that are late, misbehaving or failing to meet module deadlines will have their construction privileges revoked. Due to class size, machines will be used according to available space and work habits.

Any student that does not abide by the class room rules or conducts him/herself in an unsafe manner, will be given 3 warnings, then removed from the classroom and placed in a designated, supervised location to complete a written task. Parents and/or guardians will be contacted regarding this step in the discipline policy. Due to the class size, limited space and the student-directed learning environment, **misbehavior** will not be tolerated.

Should the same individual continue to misbehave on a regular basis the teacher will contact parents/guardian and then the administration. All stake holders will then discuss effective disciplinary action.

I have read this course outline for Construction Technologies and understand all that it contains. I am aware that I will be contacted by the teacher concerning disciplinary action involving my son/daughter.

Student: _____

Parent/Guardian: _____

Teacher: **Mr. Hansen**

A. PROGRAM RATIONALE AND PHILOSOPHY

Career and Technology Studies (CTS) is a complementary program designed for Alberta's secondary school students. As a program of choice, CTS offers all students important learning opportunities to:

- develop skills they can be applied in their daily lives, now and in the future
- refine career-planning skills
- develop technology-related skills
- enhance employability skills
- apply and reinforce learning developed in other subject areas
- prepare for transition into adult roles in the family, community, workplace and/or further education.

The course structure of CTS enables schools to design unique programs that meet the needs of students and take advantage of community resources. Developed across levels rather than grades, CTS has multiple entry points and provides secondary students with access to a common curriculum. As a competency-based curriculum, CTS recognizes prior learning from formal schooling and personal initiatives.

B. Students will be given a separate summary for possible modules selection currently offered at MHS

C. ASSESSMENT

Each module will consist of:

Theory (reading information on module, quizzes or tests)	30 %
Project (project to demonstrate skills of module)	60 %
Professionalism (work habits, care of material and equipment, Clean up and demonstration of safety practices)	<u>10 %</u>
	100%

In order for students to receive a credit for the module a grade of 50% must be achieved. Students will keep track of module completion as students cannot get a credit for doing the module over again.

Appeals Process

Should a situation arise where a student is not satisfied with an assessment outcome, first discuss the matter with the teacher outside of class time. If the teacher and the student are unable to resolve the issue, then the teacher will approach another teacher to assess the assignment. (The teacher will not have prior knowledge of the student's name or the previous grade for the given assignment). If there is still an issue, a meeting will be set up between the student, teacher, parents, and administration to resolve the matter. The commencement of an

appeal must occur in a timely manner; within 48 hours of receiving the marked assignment. In return, the appeal process will be completed as soon as possible.

Please see student agenda for more detailed appeals information.

STUDENT ASSESSMENT:

Assessment for Learning (Formative Assessment) is a systematic process of collecting information or evidence about student learning and is not assigned a grade/mark for the report card. Assessment of Learning (Summative Assessment) the judgment we make about the assessments of student learning based on established criteria and a mark/grade is recorded for the report card. The purpose of assessment is to improve student learning. This means that judgments of student performance must be criterion-referenced so that descriptive feedback can be given that includes clearly expressed next steps for improvement. Tools of varying complexity are used by the teacher to facilitate this. For the more complex evaluations, the criteria are incorporated into a rubric where levels of performance for each criterion are stated in language that can be understood by students. Where possible, students will be engaged in their own assessment through self-reflection and the construction of rubrics

Assessment is embedded within the instructional process throughout each unit rather than being an isolated event at the end. Often, the learning and assessment tasks are the same, with formative assessment provided throughout the unit. In every case, the desired demonstration of learning is articulated clearly and the learning activity is planned to make that demonstration possible. This process of beginning with the end in mind helps to keep focus on the expectations of the course curriculum outcomes. The evaluations are expressed as a percentage/mark/grade based upon levels of achievement.

D. Required Supplies

Each student is required to have the following supplies:

1. Lab Fee (dependent on the project they choose to make) (welders are required to pay a \$20 and supply materials for their projects. Carpenters are required to pay a for their own materials as needed consumables (rods, gas, nails screws, glue...)
2. Binder and pen/pencil
3. Safety glasses (school supplies some but personal ones are recommended)
4. Appropriate Footwear (no open toed shoes)

*Tape measure, lab coat, calculator are other suggested items.

E. Course/Behavior Expectations

1. Be on time.
2. Obey Lab Safety Rules
3. Be productive. This means working on your module.
4. No swearing. This is a public building!
5. Clean up after yourself. This includes all equipment.
6. No wandering in the halls.
7. Conduct yourself in a mature manner at all times.
8. Equipment of any kind does not leave this room without permission from the teacher.
9. All written work must be submitted on time.
10. The office and supplies in the office are off limits.

F. Module Deadlines

In order to receive five credits students should work everyday to the best of their ability. Should a student work effectively, he/she may receive more than five credits if he or she is able to complete more modules.

MODULE DEADLINES

1st year construction students will be required to do three required modules before they can choose other modules. These required modules are; Con1010, Con1130, and Con1160. Should a student finish their modules but not have enough time to complete another module, he/she may be asked to work on shop materials.

1st year fabrication students will be required to do three required modules before they can choose other modules. These required modules are; Fab1010, Fab1050, and Fab 1910. Should a student finish their modules but not have enough time to complete another module, he/she may be asked to work on shop materials.

G. Attendance

Attendance is taken within the first 5 minutes of class time and reported to the office electronically. Students are expected to be in the class, with necessary supplies, by the time the bell rings. In the world of work, employees are warned, disciplined or fired for being late. In this class, students will not be fired but may not be allowed to work in the shop for tardiness. Thus, being late and the number of times being late matter! This information is reported on the report card. Please take note of the number of absences and lates.

The funding that this program receives is directly related to the number of modules students successfully complete. Students can't complete modules if they are not in class!

CONSTRUCTION MODULE SUMMARIES

Introductory

CON1010: CONSTRUCTION TOOLS & MATERIALS

Students develop basic hand tool and production skills to transform common building materials safely into useful products.

Prerequisite: None

CON1070: BUILDING CONSTRUCTION

Students examine common building systems and develop basic skills related to building a simple model or full-size system/structure.

Prerequisite: CON1010: Construction Tools & Materials

CON1120: PRODUCT MANAGEMENT

Students develop basic shop drawing and estimating skills and apply them to build a product.

Prerequisite: CON1010: Construction Tools & Materials

CON1130: SOLID STOCK CONSTRUCTION

Students develop basic hand and power tool skills to build a product made from solid wood.

Prerequisite: CON1010: Construction Tools & Materials

CON1140: TURNING OPERATIONS

Students use wood turning equipment and techniques to create a faceplate and spindle turning made from solid and/or built-up stock.

Prerequisite: CON1010: Construction Tools & Materials

CON1160: MANUFACTURED MATERIALS

Students select and use the appropriate materials and tools to build a product or structure from a wood composite or another manufactured material.

Prerequisite: CON1010: Construction Tools & Materials

CON1910: CON PROJECT A

Students develop project design and management skills to extend and enhance competencies and skills in other Career and Technology Studies (CTS) courses through contexts that are personally relevant.

Prerequisite: None

Intermediate

CON2035: FLOOR FRAMING SYSTEMS

Students develop basic framing knowledge and skills associated with the construction of a floor and wall system.

Prerequisite: CON1010

CON2050: WALL FRAMING SYSTEMS

Students develop basic framing knowledge and skills associated with the construction of a wall system.

Prerequisite: CON1010: Construction Tools & Materials

CON2050: ROOF STRUCTURES 1 (FRAMING & FINISHING)

Students develop basic knowledge and skills associated with framing and finishing a simple roof system.

Prerequisite: CON1010: Construction Tools & Materials

CON2060: EXTERIOR FINISHING (DOOR, WINDOW & SIDING)

Students apply and develop basic knowledge of door, window and siding systems and of installation skills and procedures.

Prerequisite: CON1010: Construction Tools & Materials

CON2100: AGRI-STRUCTURES

Students apply construction principles and skills and use pre-engineered designs to build a structure to be used for agricultural purposes.

Prerequisite: CON1010: Construction Tools & Materials

CON2120: MULTIPLE MATERIALS

Students develop a product that incorporates two or more types of material in its construction.

Prerequisite: CON1120: Product Management

CON2130: FURNITURE MAKING 1 (BOX CONSTRUCTION)

Students develop basic joinery skills and knowledge related to case construction by producing a box-type piece of furniture.

Prerequisite: CON1120: Product Management

CON2140: FURNITURE MAKING 2 (FRAME & PANEL)

Students use solid and/or composite materials to build a frame and panel product or component.

Prerequisite: CON1120: Product Management

CON2150: FINISHING & REFINISHING

Students use knowledge of finishing materials and finishing techniques to apply new and replacement finishes.

Prerequisite: CON1010: Construction Tools & Materials

CON2160: CABINETMAKING 1 (WEB & FACE FRAME)

Students apply web and face frame construction techniques and use solid and/or manufactured materials to produce a built-in or modular cabinet.

Prerequisite: CON1120: Product Management

CON2170: CABINETMAKING 2 (DOOR & DRAWER)

Students use solid and composite materials to develop skills in building cabinet doors and drawers.

Prerequisite: CON1120: Product Management

CON2180: WOOD FORMING

Students apply skills in mould making and wood conditioning to make a formed part or component.

Prerequisite: CON1120: Product Management

ON2190: MANUFACTURING SYSTEMS

Students investigate the nature of manufacturing systems used to produce durable goods.

Prerequisite: None

CON2200: PRODUCT DEVELOPMENT

Students work, individually or as team members, to research, design and build a product suitable for mass production and marketing.

Prerequisite: CON1010: Construction Tools & Materials

CON2910: CON PROJECT B

Students develop project design and management skills to extend and enhance competencies and skills in other Career and Technology Studies (CTS) courses through contexts that are personally relevant.

Prerequisite: None

CON2920: CON PROJECT C

Students develop project design and management skills to extend and enhance competencies and skills in other Career and Technology Studies (CTS) courses through contexts that are personally relevant.

Prerequisite: None

Advanced

CON3030: WALL & CEILING FINISHING

Students develop basic knowledge and skills to insulate, install and finish an interior wall/ceiling surface.

Prerequisite: CON1010: Construction Tools & Materials

CON3040: STAIR CONSTRUCTION

Students develop the knowledge and skills required to build a straight flight of stairs.

Prerequisite: CON1010: Construction Tools & Materials

CON3050: ROOF STRUCTURES 2 (FRAMING & COVERING)

Students develop basic competencies in laying out, cutting and assembling common, hip and valley rafters in relation to specialized structures and coverings.

Prerequisite: CON2050: Roof Structures 1 (Framing & Finishing)

CON3060: DOORS & TRIM

Students apply basic finish carpentry knowledge and skills to install doors, railings and moldings.

Prerequisite: CON1010: Construction Tools & Materials

CON3070: FLOORCOVERING

Students develop skills in selecting and installing typical floor coverings used in residential, institutional and commercial buildings

Prerequisite: CON1010: Construction Tools & Materials

CON3080: ENERGY-EFFICIENT HOUSING

Students investigate construction practices and support systems to create an energy-efficient housing design.

Prerequisite: CON1070: Building Construction

CON3090: RENOVATIONS/RESTORATIONS

Students work with a client to plan and complete a building renovation and/or restoration.

Prerequisite: CON1070: Building Construction

CON3120: TOOL MAINTENANCE

Students develop skills in preventive maintenance by routinely inspecting and servicing production tools and equipment.

Prerequisite: CON1010: Construction Tools & Materials

CON3130: FURNITURE MAKING 3 (LEG & RAIL)

Students use solid and/or manufactured materials and leg-and-rail or pedestal construction techniques to build a free-standing piece of furniture.

Prerequisite: CON1120: Product Management

CON3140: FURNITURE MAKING 4 (SURFACE ENHANCEMENT)

Students explore and demonstrate the use of veneer, inlay, carving and/or marquetry techniques to enhance the appearance of a product or component.

Prerequisite: CON1120: Product Management

CON3150: FURNITURE REPAIR

Students apply basic knowledge of furniture construction and materials to repair or replace existing components or coverings.

Prerequisite: CON1120: Product Management

CON3160: CABINETMAKING 3 (CABINETS/COUNTERTOPS)

Students develop the knowledge and skills required to build and install a simple cabinet/countertop, complete with an appropriate backsplash and edge treatment.

Prerequisite: CON1120: Product Management

CON3170: CABINETMAKING 4 (LAYOUT & INSTALLATION)

Students develop a floor/wall cabinet plan and order and install a set of pre-built cabinets.

Prerequisite: CON1120: Product Management

CON3210: FRAMING SYSTEMS 2 (FLOOR, WALL & CEILING)

Students develop appropriate layout and assembly skills to install conventional and/or engineered framing components associated with residential and/or light commercial construction.

Prerequisites: CON2035: Floor Framing Systems

CON2045: Wall Framing Systems

CON3910: CON PROJECT D

Students develop project design and management skills to extend and enhance competencies and skills in other Career and Technology Studies (CTS) courses through contexts that are personally relevant

Prerequisite: None

CON3920: CON PROJECT E

Students develop project design and management skills to extend and enhance competencies and skills in other Career and Technology Studies (CTS) courses through contexts that are personally relevant.

Prerequisite: None

Fabrication

We are also beginning a fabrication section at MHS. We currently are offering the following welding modules and will be adding more in the future. (Note there is a consumable fee as well as per project fee for these modules)

FAB1010: FABRICATION TOOLS & MATERIALS

Students develop knowledge and skills in the use of basic hand tools and materials used in fabrication processes, and safely transform common metals into useful products.

Prerequisite: None

FAB1050: BASIC ELECTRIC WELDING

Students develop basic skills related to the safe use and operation of one or more common electric welding processes.

Prerequisite: FAB1010: Fabrication Tools & Materials

FAB1910: FAB PROJECT A

Students develop project design and management skills to extend and enhance competencies and skills in other CTS

courses through contexts that are personally relevant.

Prerequisite: None

FAB2050: ARC WELDING 1

Students develop basic knowledge, skills and attitudes related to the operation and use of Shielded Metal Arc Welding (SMAW) equipment and accessories to make a variety of welds in the flat position.

Prerequisite: *FAB1050: Basic Electric Welding*

FAB2060: ARC WELDING 2

Students identify appropriate electrodes by visually assessing a weld and making the necessary adjustments to improve weld quality while developing horizontal position welding skills.

Prerequisite: *FAB2050: Arc Welding 1*