

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** SCAFFOLDING, EARTHWORK BARRIERS  
AND CONTROLS  
**CODE NO. :** CCT122 **SEMESTER:** TWO  
**PROGRAM:** CONSTRUCTION CARPENTRY TECHNIQUES  
**AUTHOR:** SAM SPADAFORA  
**INSTRUCTOR:** MIKE BUTCHER  
**DATE:** January 2016 **PREVIOUS OUTLINE  
DATED:** January 2015

**APPROVED:**

*“Corey Meunier”*

**CHAIR**

**DATE**

**TOTAL CREDITS:** 4  
**PREREQUISITE(S):** NONE  
**HOURS/WEEK:** 4

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**For additional information, please contact Corey Meunier, Chair**  
**School of Technology & Skilled Trades**

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**I. COURSE DESCRIPTION:**

This course focuses on elements of Construction site set up and control including, but not limited to, Scaffolding, Earthwork, Barriers and Control.

A significant portion of the course will focus on the methods and procedures used in scaffold erection and dismantlement. You will learn how to interpret scaffolding requirements from print, layout and sketches. The use of scaffold inspection procedures will also be covered as well as the methods and processes in base preparation, placement of scaffold mudsill and components. You will also learn to install two scaffolding system types including standard frame and stick built.

The course will also focus on Earthwork, Barriers and Controls. You will learn to interpret prints and plans related to back fill and compaction procedures. You will also learn about methods and procedures used for traffic control in backfill and compaction operations as well as protection board, insulation materials and material placement.

**II. LEARNING OUTCOMES:**

1. Describe and demonstrate methods and procedures for the use of hand, power and stationary tools and equipment according to industry standards and practices
2. Adhere to applicable health and safety related legislation and practices.
3. Describe and demonstrate methods and procedures required for scaffold erection and dismantlement according to industry standards and practices.
4. Describe earthwork, barriers and environmental control practices and procedures according to industry standards and practice.
5. Apply sound environmental practices and policies in civil engineering and construction projects.

**III. REQUIRED RESOURCES/TEXTS/MATERIALS:**

**1. 2012 Pocket Ontario OH&S Act & Regulations – Construction Edition** (Available in the Sault College Book Store)

**2. Personal Protective Equipment (PPE)** will be required during classes to be conducted in a shop environment. PPE required to be:

- a) CSA Certified Hard Hat
- b) CSA Certified (Green Patch) work boots
- c) CSA Certified Safety Glasses
- d) Work gloves

**IV. EVALUATION PROCESS/GRADING SYSTEM:**

Assignments and Tests	50%
Labs/Activities	35%
Attendance	15%
Total	100%

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<i>Grade Point Equivalent</i>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

**VI. SPECIAL NOTES:**Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

**COURSE OUTLINE ADDENDUM:**

The provisions contained in the addendum located on the portal form part of this course outline.

**VII. TOPIC OUTLINE**

<b>Outcome</b>	<b>Topic and Content</b>	<b>Reading</b>	<b>Week</b>
2,3	1. Scaffolding Problem Areas  1.1. Erecting and Dismantling 1.2. Climbing Up and Down 1.3. Planks Sliding Off or Breaking 1.4. Improper Loading or Overloading 1.5. Platforms Not Fully Planked 1.6. Platforms without Guardrails 1.7. Failure to Install Required Components 1.8. Electrical contact with overhead Wires 1.9. Moving Rolling Scaffolding with Workers on the Platform 1.10 Assignment #1-Answer questions at the end of the chapter	Handout	1
2,3	2. Basic Types of Scaffolds  2.1. Standard Tubular Frame Scaffolds 2.2. Standard Walk-through Frame Scaffolds 2.3. Spans of Tower Base 2.4. Rolling Scaffolds 2.5. Fold-up Scaffold Frames 2.6. Adjustable Scaffolds 2.7. Tube-and-Clamp Scaffolds 2.8. System Scaffolds 2.9. Mast Climbing Scaffolds 2.10. Crank-Up or Tower Scaffolds 2.11. Assignment #2-Answer questions at the end of the chapter 2.12 Activity #1- Set-up of one Section of Scaffolding	Handout	2

2,3	3. Scaffold Components	Handout	3
	3.1. Platforms		
	3.2. Outrigger Brackets		
	3.3. Ladders		
	3.4. Guardrails		
	3.5 Test #1 on Units 1,2,3		
1,2,3	4. Erecting and Dismantling Scaffolds	Handout	4,5
	4.1. Foundation and Support Surfaces		
	4.2. Inspection		
	4.3. Location		
	4.4. Base Plates		
	4.5. Plumb		
	4.6. Hoisting Materials		
	4.7. Tie-Ins		
	4.8. Fall Protection in Scaffold Erection		
	4.9. Erecting Frame Scaffolds		
	4.10. Erecting Tube-and-Clamp Scaffolds		
	4.11. Erection of System Scaffolds		
	4.12. Assignment #3-Answer questions at the end of the chapter		
	4.13. Activity #2- Set-up of two Section of Scaffolding horizontally		
	4.14. Test #2 – Unit #4		
2,3	5. Scaffold Stability	Handout	6
	6.1 Three-to-One Rule		
	6.2 Outrigger Stabilizers		
	6.3 Limitations to the Three-to-One Rule		
	6.4 Damage		
	6.5 Installation Problems and Symptoms		
	6.6 Tie-in Requirements		
	6.7 Assignment #3-Answer questions at the end of the chapter		
	6.8. Activity #3- Set-up of two Section of Scaffolding vertically with guardrails on the second section		
2,3	6. Platforms	Handout	6
	6.1. Typical Load Requirements		
	6.2. Aluminum/Plywood Platform Panels		
	6.3. Laminated Veneer Lumber		
	6.4. Sawn Lumber Planks		
	6.5. Securing Platforms to the Frame		
	6.6. Wind Uplift		
	6.7. Assignment #4-Answer questions at the end of the Chapter.		

2,3	7. Proper use of Scaffolds	Handout	6,7
	7.1. Ladders and Climbing		
	7.2. Guardrails Missing or Removed		
	7.3. Standing on Objects Above the Platform		
	7.4. Overload		
	7.5. Debris on Scaffold Decks		
	7.6. Exposure to Hazardous Material		
	7.7. Assignment #4-Answer questions at the end of the chapter.		
	7.8. Test #3 Unit 5,6,7.		
1,2,3,5	8. Scaffold –Occupational Health and Safety Act	Handout OHSA	8
	8.1. Assignment #5 –Using the OHSA answer the following questions		
	8.2. Stick built scaffolding (Discuss one design)		
2,3	9. Fall Arrest Training	Training	9
	9.1. Student to receive Fall Arrest Training		
4	10. The Building Site	Handout	10
	10.1 Assignment #6 “The Building Site		
	10.2 Earthwork Barriers and Controls Definitions		
2,4,5	11. Traffic Control	Handout	11
	11.1 Assignment #7 -Guidelines for Training Traffic Control Persons		
	11.2. Handbook for Construction Traffic Control persons		
2	12. Backing Up	Handout	12
	12.1. Assignment #8-Backing up Safety Manual		
2,4,5	13. Trenching Safety	Handout	13
	13.1. Assignment #9-Trenching Safety		
4,5	14. Compaction, Protection Board, Insulation, Vapour Barriers	Handout	14,15
	Material Placement and compaction		
	Protection Board		
	Insulation Materials		
	Vapour Barrier		