

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



CICE COURSE OUTLINE

COURSE TITLE: Scaffolding, Earthwork Barriers and Controls

CODE NO. : CCT122 **SEMESTER:** Winter
MODIFIED CODE: CCT0122

PROGRAM: Construction Carpentry Techniques

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MODIFIED BY: Rachel Valois, Learning Specialist CICE Program

DATE: Jan. 2015 **PREVIOUS OUTLINE DATED:** Jan. 2014

APPROVED: "Angelique Lemay" Jan. 2015

***Dean, School of Community Services
and Interdisciplinary Studies***

TOTAL CREDITS: 4

PREREQUISITE(S): NONE

HOURS/WEEK: 4

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I. COURSE DESCRIPTION:

In the first part of the course, the CICE student, with assistance from a learning specialist, will be able to describe the methods and procedures required for scaffold erection and dismantling according to industry standards and practices. In the second part of the course, the CICE student, with assistance from a learning specialist, will be able to describe earthwork barriers and environmental control practices and procedures according to industry standards and practices.

II. LEARNING OUTCOMES:

Upon successful completion of this course, the CICE student, along with the assistance of a Learning Specialist, will demonstrate the basic ability to:

1. Recognize 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. Recognize and demonstrate methods and procedures required for scaffold erection and dismantlement according to industry standards and practices.
4. Recognize 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. **2009 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 Activities (9-3)	50%
Tests	35%
Attendance	15%
Total	100%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	
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.	

VII. TOPIC OUTLINE

Outcome	Topic and Content	Reading	Week
2,3	1. Scaffolding Problem Areas	Handout	1
	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		
2,3	2. Basic Types of Scaffolds	Handout	2
	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		
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		

Addendum:

Further modifications may be required as needed as the semester progresses based on individual student(s) abilities and agreed upon by the instructor.

CICE Modifications:

Preparation and Participation

1. A Learning Specialist will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

A. Tests may be modified in the following ways:

1. Tests, which require essay answers, may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests, which use fill in the blank format, may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

B. Tests will be written in CICE office with assistance from a Learning Specialist.

The Learning Specialist may:

1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

C. Assignments may be modified in the following ways:

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

The Learning Specialist may:

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

D. Evaluation:

Is reflective of modified learning outcomes.