

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: RIGGING AND HOISTING (MILLWRIGHT)
CODE NO. : RIG101 **SEMESTER:**
PROGRAM: MECHANICAL PROGRAMS
AUTHOR: Howard Gray
howard.gray@saultcollege.ca
DATE: JAN 2013 **PREVIOUS OUTLINE DATED:** JAN 2012
APPROVED: *“Corey Meunier”*
CHAIR **DATE**
TOTAL CREDITS: 2
PREREQUISITE(S): N/A
HOURS/WEEK: 2

Copyright ©2013 The Sault College of Applied Arts & Technology
Reproduction of this document by any means, in whole or in part, without prior written permission of Sault College of Applied Arts & Technology is prohibited.
For additional information, please contact Corey Meunier, Chair
School of Technology & Skilled Trades
(705) 759-2554, Ext. 2610

I. COURSE DESCRIPTION:

This course is designed to provide the student with the knowledge and understanding of correct lifting and hoisting procedures and the safe use of related equipment.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. List, describe, and comply with all safety rules and procedures pertaining to lifting, hoisting and moving machinery as outlined in the OH&S ACT.

Potential Elements of the Performance:

- List five safety rules
- Describe the steps taken to complete one lifting procedure
- Demonstrate a good comprehension of lifting techniques

2. Plan a lift

Potential Elements of the Performance:

- Using load charts select the correct size of slings.
- State the SWL limits
- Using weight charts, calculate the weight of the load

3. Select, Inspect and Maintain hoist and rigging equipment.

Potential Elements of the Performance:

- Describe the construction of wire rope
- Name three types of slings
- List the key points for inspecting chains
- Describe the difference between a Spreader bar and an Equalizer beam
- Describe how to inspect and measure a hook
- Explain the main reason to inspect eye bolts, shackles and turn buckles
- Explain why you would select a block and winch.
- Describe the difference between a chain fall and a come-along

4. Describe the principles and operation of hoists both overhead and mobile.

Potential Elements of the Performance:

- Describe the major differences between overhead and mobile cranes
- Explain the advantages and disadvantages of both styles of hoists

5. *Demonstrate signals to ensure that correct and safe hoisting operations are performed.*

Potential Elements of the Performance:

- Identify each hand signal
- Demonstrate each signal
- Explain the procedure for signaling via radio

6. *Demonstrate the ability to tie common knots used in rigging.*

Potential Elements of the Performance:

- Square or reef knot
- Clove hitch
- Timber hitch
- Bowline
- Bowline on a bite
- Double bowline

7. *Demonstrate methods of rigging, hoisting and moving machinery and equipment safely into position.*

Potential Elements of the Performance:

- Explain the choice of rigging
- Describe the hoist selection
- Safely move a load

III. TOPICS:

1. SAFE LIFTING PROCEDURES
2. PLANNING A LIFT
3. SELECTING, INSPECTING AND MAINTAINING EQUIPMENT
4. OVERHEAD AND MOBILE CRANES
5. HOISTING SIGNALS
6. COMMON KNOTS USED IN RIGGING
7. PRACTICAL RIGGING

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

BC Millwright Manual

Rigging Fundamentals (level one) available in book store

Handouts

V. EVALUATION PROCESS/GRADING SYSTEM:

| | |
|--|-----|
| Quizzes(7), Tests (4) | 45% |
| Labwork/Practical Participation | 30% |
| Final Exam | 10% |
| Attendance (min.80% req.) (see Special Notes section) | 15% |

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% | 3.00 |
| B | 70 - 79% | 2.00 |
| C | 60 - 69% | 1.00 |
| D | 50 – 59% | 0.00 |
| F (Fail) | 49% and below | |
| 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.

Due to the Safety concerns of this course, students who **do not** attend a minimum of 80% (12 classes) of the scheduled classes will be given an "F" grade for this course.

VII. COURSE OUTLINE ADDENDUM:

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