

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:** 2
PROGRAM: Mechanical Engineering Technician
AUTHOR: Howard Gray
DATE: Aug 2007 **PREVIOUS OUTLINE DATED:**

APPROVED:

	_____	_____
	CHAIR	DATE
TOTAL CREDITS:	2	

PREREQUISITE(S):

HOURS/WEEK:

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For additional information, please contact Corey Meunier, Chair
School of the Natural Environment, 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. The student will be expected to participate in individual and team practical exercises.

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.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 liftPotential Elements of the Performance:

- Calculate the weight of the load
- Using load charts select the correct size of slings.
- State the SWL limits
- Describe an assessment of the load characteristics

3. Select, Inspect and Maintain hoist and rigging equipmentPotential Elements of the Performance:

- Describe the construction of wire rope
- List two methods for lubricating wire ropes
- Name three types of slings
- List the key points for inspecting chains
- Explain the use of Skates, Rollers
- 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
- Describe the draw back relating to pancake jacks
- Explain why you would select a block and winch.
- List five points to note when inspecting ladders and scaffolding
- 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 hoist
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:
 - Tie a square or reef knot
 - Tie a clove hitch
 - Tie a timber hitch
 - Tie a 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.
8. **Describe methods of installing and aligning machinery to specifications**
Potential Elements of the Performance:
 - Describe two methods used to align machinery.
 - Explain the most accurate method of aligning machinery

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
8. Aligning Machinery

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**Crane and Rigging Handbook****V. EVALUATION PROCESS/GRADING SYSTEM:****Topic quizzes Reinforcement****Theory test 50%****Practical test 50%**

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%	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:**Special Needs:**

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 so that support services can be arranged for you.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Communication:

The College considers **LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.