



## COURSE OUTLINE: MCH0142 - PUMPS VALVES PIPING

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Approved: Martha Irwin, Chair, Community Services and Interdisciplinary Studies

<b>Course Code: Title</b>	MCH0142: PUMPS, VALVES, PIPING AND COMPRESSORS
<b>Program Number: Name</b>	1120: COMMUNITY INTEGRATN
<b>Department:</b>	C.I.C.E.
<b>Semesters/Terms:</b>	19W, 19S
<b>Course Description:</b>	In this course, the student will learn about the different applications, installation, maintenance and types of pumps, valves, piping, compressors and ancillary equipment.
<b>Total Credits:</b>	3
<b>Hours/Week:</b>	3
<b>Total Hours:</b>	45
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p>
<b>Course Evaluation:</b>	Passing Grade: 50%, D
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<p>Make Up Tests if needed.</p> <p>Grade Definition Grade Point Equivalent 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</p> <p>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.</p>



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NR Grade not reported to Registrar's office.  
 W Student has withdrawn from the course without academic penalty.

**Books and Required Resources:**

Industrial Millwright Manual by Province of British Columbia  
 Paper Calculator Safety Equipment

**Course Outcomes and Learning Objectives:**

Upon successful completion of this course, the CICE student, with the assistance of a Learning Specialist will acquire varying levels of skill development relevant to the following learning outcomes:

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
Discuss and demonstrate knowledge in various centrifugal type pumps.	Principles of non-positive displacement type pumps Various types of centrifugal type pumps & components Types of seals used in centrifugal pumps Assignments related to centrifugal pumps Installation, start-up and safety requirements Maintenance requirements for centrifugal pumps
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
Discuss and demonstrate knowledge with Positive Displacement type pumps.	Principles of positive displacement type pumps Compare positive and non-positive displacement pumps Discuss various types of positive displacement pumps Perform assignments related to positive displacement pumps Installation, start-up and safety requirements Maintenance requirements for positive displacement pumps
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
Discuss various types of conductors used in the trades. (Piping, tubing, hoses, fittings, ect.)	Discuss various types of uses for conductors Discuss various materials and uses Discuss sizing, and theory requirements Discuss fittings and sealants used with conductors Demonstrate installation techniques with conductors/fittings Perform assignments related to conductors Discuss safety requirements related to conductors
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
Discuss various types of valves used in todays mechanical field.	Discuss theory requirements with various valves Examine specific uses for various type valves Examine design qualities Discuss installation techniques Discuss specific sealants used with valves Discuss safety and lockouts for valves
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
Discuss various types of compressors used in today	Discuss relevant theory related to compressors Discuss the various types and uses of compressors ( reciprocating, rotary, screw, positive, dynamic or kinetic) Discuss Staging and Acting Compressors Discuss compressor components and uses Discuss safety and maintenance of compressors Discuss troubleshooting

**Evaluation Process and Grading System:**

<b>Evaluation Type</b>	<b>Evaluation Weight</b>	<b>Course Outcome Assessed</b>
Final Exam	10%	



Student Performance	10%	
Term Assignments	40%	
Term Tests	40%	

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

**B. 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.

**C. 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.

**D. 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

**E. Evaluation:**

Is reflective of modified learning outcomes.

**NOTE:** Due to the possibility of documented medical issues, CICE students may require alternate methods of evaluation to be able to acquire and demonstrate the modified learning outcomes

**Date:**

February 5, 2019

Please refer to the course outline addendum on the Learning Management System for further information.

