

I. COURSE DESCRIPTION:

In this course, the student will learn about the different applications, installation, maintenance and types of pumps, valves, piping, compressors and ancillary equipment. Along with class instruction, knowledge will be gained through theory and practical assignments.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. *Discuss and demonstrate knowledge in various centrifugal type pumps.*

Potential Elements of the Performance:

- 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

2. *Discuss and demonstrate knowledge with Positive Displacement type pumps.*

Potential Elements of the Performance:

- 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

3. *Discuss various types of conductors used in the trades. (Piping, tubing, hoses, fittings, ect.)*

Potential Elements of the Performance:

- 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

4. Discuss various types of valves used in today's mechanical field.

Potential Elements of the Performance:

- 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

5. Discuss various types of compressors used in today

Potential Elements of the Performance:

- 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

III. TOPICS:

1. Centrifugal (non-positive displacement) pumps
2. Positive displacement pumps
3. Conductors (pipe, tube, hose, fittings, sealants)
4. Various Valves
5. Compressors

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Millwright Manual, Personal notes, Computer Access, Safety Wear

V. EVALUATION PROCESS/GRADING SYSTEM:

- Tests 40%
- Assignments..... 40%
- Final Exam 10%
- Work performance 10% (*Will be explained in detail in class*)

Note: 1% is deducted from final mark for every inexcusable hour missed from class (will be discussed in first class)

The following semester grades will be assigned to students in postsecondary courses:

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.	

VI. SPECIAL NOTES:

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.

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.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

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

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Communication:

The College considers **WebCT/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*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade “C”, (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. 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.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

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.