



**I. COURSE DESCRIPTION:**

This course is intended to provide the students with basics as related to the operation of water and wastewater systems. The basics as related to topics including: conversions, math, chemistry, hydraulics, electricity will be discussed first. It will be followed by topics on support systems mainly pertaining to pumps and motors and processes in water distribution and water treatment and wastewater collection and wastewater treatment. At the end of the course students will be fully prepared to write the entry level certification examination.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

1. Standards of measure and units conversions
2. Explain and describe water regulation
3. Make area and volume calculations as related to water and wastewater units and devices
4. Define the terms in water and wastewater operations
5. Apply the principles of hydraulics to find flow rates, pressures and pumping head and power
6. Identify the basic principles of and recognize the importance of disinfection of water.
7. Define electrical terms: current, emf, and resistance and describe the relation between them
8. Describe the parameters of water quality and sampling for compliance and process control
9. Describe the basic principles of safety as applied to water and wastewater operations.
10. Describe the main processes employed in water and wastewater treatment.
11. . Explain the processes and equipment employed in water distribution and wastewater collection systems.

**III TOPICS:**

1. Units And Math
2. Basic Hydraulics
3. Electricity
4. Chemistry Basics
5. Water Quality and Sampling
6. Support Systems
7. Safety
8. Regulation

- 9. Water Treatment
- 10. Water Distribution
- 11. Wastewater Collection
- 12. Wastewater Treatment

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Certification Preparation Manual by S. Verma, Environmental Training Services, Sault Ste. Marie, Canada, LMS (pdf)

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Final mark in the course will be based on the following:

Four Tests                      100%

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<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)	<50%	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:**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. *It is the departmental policy that once the classroom door has enclosed, the learning process has begun. Late arrives will not be granted admission to the room*