# SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

## SAULT STE. MARIE, ONTARIO

Sault College

## COURSE OUTLINE

**COURSE TITLE:** **Certification Preparation**

**CODE NO. :** **WTR 241-4** **SEMESTER:** **II**

**PROGRAM:** **Environmental Technician – Water**

**AUTHOR:** ***Subhash Verma; P. Eng.***

**DATE:** **07 01 08** **PREVIOUS OUTLINE DATED:**

**APPROVED:** **05 01 01**

_____ _____

**DEAN** **DATE**

**TOTAL CREDITS:** **4**

**PREREQUISITE(S):** **None**

**HOURS/WEEK:** **4**

## 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. Define electrical terms: current, emf, and resistance and describe the relation between them

7. Describe the parameters of water quality and sampling for compliance and process control

8. Describe the basic principles of safety as applied to water and wastewater operations.

9. Identify the basic principles of and recognize the importance of disinfection of water.

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:

1. Ministry of environment, operator-in-training study guide

2. Course manual and Presentations by S. Verma

## V. EVALUATION PROCESS/GRADING SYSTEM:

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

| | |
|---|---|
| Short tests | 75% |
| Participation | 25% |

The following semester grades will be assigned to students:

| **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 |

| | |
|---|---|
| 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 2703 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 ***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*. 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.

Assignments/Laboratory Work:
Home assignments are due one week after they are assigned. Late submissions will be penalized. Laboratory work is an important component of this course. Performing laboratory experiments will reinforce the concepts discussed in the theory class. If required, changes will be made. However, students will be notified prior to any changes.

## VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor.

## 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.