

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: WASTEWATER COLLECTION SYSTEMS

CODE NO. : WTR232 **SEMESTER:** III

PROGRAM: ENVIRONMENTAL TECHNICIAN-WATER

AUTHOR: DAVID TROWBRIDGE

DATE: Aug 2011 **PREVIOUS OUTLINE DATED:** Aug 2010

APPROVED: "B.Punch"

CHAIR **DATE**

TOTAL CREDITS: FOUR

PREREQUISITE(S): WTR 241 CERTIFICATION PREPARATION

HOURS/WEEK: FOUR

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I. COURSE DESCRIPTION:

The objective of this course is to develop the knowledge and skills to effectively operate and maintain wastewater collection systems. The main topics include: components and types of wastewater collection systems, system hydraulics, safety, inspections, cleaning methods and lift stations.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Explain the responsibilities of collection system operators.

Potential Elements of the Performance:

- Identify the role of collection system operators in ensuring the proper treatment of wastewater
 - Explain the legal responsibilities applicable to wastewater collection operators
 - List the training requirements determined by current regulations
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2. Identify and explain the types and purpose of collection systems.

Potential Elements of the Performance:

- Define what is a wastewater collection system
 - Identify the common wastewater collection types
 - Identify common components of collection systems
 - Distinguish between storm and sanitary system design
3. Describe correct design and operating procedures

Potential Elements of the Performance:

- Identify causes of abnormal conditions using proper troubleshooting techniques
- Explain interaction with other processes and the total treatment process
- Identify considerations which are applicable to collection system design
- Explain the purpose, construction and operation of lift stations

4. Determine and demonstrate safe work procedures

Potential Elements of the Performance:

- List correct procedures relating to traffic safety
- List correct procedures relating to maintenance access points
- Describe and demonstrate correct use of personal safety equipment
- Apply procedures required in confined space entry
- List factors related to electrical safety

5. Explain concepts and procedures to inspect and test collection systems

Potential Elements of the Performance:

- List reasons for inspecting and testing systems
- Describe correct procedures for inspection of maintenance access points
- Discuss the role and application of closed-circuit television inspection
- Describe the purpose of and procedures in smoke and dye testing
- Describe the purpose of and procedures in pipeline testing

6. Describe operation and maintenance procedures

Potential Elements of the Performance:

- Identify types and causes of sewer stoppages
- Select proper methods to clear stoppages and clean sewers
- Determine equipment and personnel requirements for various cleaning scenarios
- Set up and operate cleaning equipment safely according to accepted practice
- Record essential data related to the clearing and cleaning process
- Describe a preventative maintenance program
- Discuss the purpose and implementation of Sewer Use Bylaws
- Perform sampling activities as required in sewer use monitoring

III. TOPICS:

WASTEWATER COLLECTION
SYSTEMS

WTR232

1. Operators role and responsibilities
2. Purpose of collections systems
3. Design considerations
4. Collection system safety
5. Inspection and testing
6. Operation and maintenance

IV. RECOMMENDED RESOURCES/TEXTS/MATERIALS:

Operation and Maintenance of Wastewater Collection Systems, Volume 1
California State University, Sacramento, Department of Civil Engineering
Office of Water Programs

Additional reference texts

Water and Wastewater Technology, Hammer and Hammer,

V. EVALUATION PROCESS/GRADING SYSTEM:

Quizzes and assignments	25 %
Term tests (2 @ 20% each)	40 %
Final test	<u>35 %</u>
Total	100%

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

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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.

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.ca 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, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. 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. Cell phones create disturbance in the classroom. In exceptional circumstances and with prior agreement with the instructor permission may be given for students to have phones activated.

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.

Tuition Default:

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of November, will be removed from placement and clinical activities. This may result in loss of mandatory hours or incomplete course work.

Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.