SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	Computer Applications		
CODE NO. :	WTR 203	**SEMESTER:**	4
PROGRAM:	Environmental Engineering Technician-Water		
AUTHOR:	*Subhash Verma, P.Eng.*		
DATE:	11 01	**PREVIOUS OUTLINE DATED**	N/A
APPROVED:	"B.Punch"		
	Chair		**DATE**
TOTAL CREDITS:	4		
PREREQUISITE:	WTR330 or Equivalent		

I. COURSE DESCRIPTION:

This is an introductory course to municipal services. Students will be introduced to the basic principles and procedures for the design and construction of water distribution, sanitary sewer and storm drainage systems.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Apply the basic principles of hydraulics applicable to water distribution and wastewater collection.

   Potential Elements of the Performance:

   - Explain the principles of hydrostatic pressure
   - Complete calculations with hydrostatic pressure
   - Apply Bernoulli's principle
   - Complete calculations to determine flow (Darcy Weisbach and Hazen Williams equations)
   - Complete calculations to determine flow in pipes under pressure
   - Complete calculations to determine flow in channels (Manning's Equation)

2. Apply the principles of hydrology to storm water management systems, including environmental consideration.

4. Identify components of storm drainage system and apply the principle

criteria.

Potential Elements of the Performance:

- estimate storm runoff volumes
- describe effects of land development on storm runoff
- list factors to be considered in storm sewer layout and design
- complete storm sewer design calculations
- Describe the effects of flooding

III. TOPICS:

- Hydraulics
- Hydrology
- Water Distribution Systems
- Storm Water Management

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Computer Applications in Hydraulic Engineering, Haestad Methods, Haestad Press, 7th edition

V EVALUATION PROCESS/GRADING SYSTEM:

The final grade will be derived from the results of the tests and lab work and assignments, weighted as follows:

Term Tests	- 50%
Home work	- 25%
Quiz Tests	- 25%

To pass the course a minimum of 50% score is required. The following semester grades will be assigned to students in postsecondary courses :

A+	90 - 100%	4.00
A	80 - 89%	4.00
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:

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*