

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Source Water Protection

**CODE NO. :** NET 305 **SEMESTER:** I

**PROGRAM:** Natural Environment Technologist

**AUTHOR:** *Trisha Westman*

**DATE:** Dec 2011 **PREVIOUS OUTLINE DATED:** NA

**APPROVED:** "B.Punch"

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Chair		DATE

**TOTAL CREDITS:** 3

**PREREQUISITE(S):**

**HOURS/WEEK:** 3

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*For additional information, please contact, Brian Punch, Chair  
Environment and Design School of Technology and Natural Resources  
(705) 759-2554, Ext. 2681*

**I. COURSE DESCRIPTION:**

This course gives students the tools to answer the call for action to protect our globally dwindling fresh water supplies. Students will be introduced to watershed management as a means of protecting drinking water sources. The basic hydrology of surface water and groundwater supplies will be discussed. Threats to water quantity and quality will be examined, as well as methods of contamination. Students will learn the steps involved in developing source water protection plans and their implementation. The role of government in source water protection of source water will be discussed from a Canadian perspective. Students will apply their knowledge in the field by tackling a local source water issue and implementing a solution.

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

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

- 1 Appreciate the demands on the global water supply and the future predictions of escalating issues surrounding water quantity and quality
- 2 Understand the concept of source water protection as the first step in a multi-barrier approach to the delivery of safe drinking water
- 3 Apply the basics of hydrology and hydrogeology to understand surface water and groundwater supply models and water budgeting
- 4 Explain the key water quality characteristics used to evaluate the safety of drinking water and demonstrate how they are measured
- 5 Identify different types of contaminants and methods of contamination which threaten source water quality
- 6 Understand the impact of climate change on source water
- 7 Explain the steps involved in developing a source water protection plan
- 8 Understand concepts involved in mitigating hydrologic impact including prevention, pollution control and the importance of monitoring
- 9 Describe the function of government in water management in Canada and identify the roles and responsibilities of federal, provincial and municipal agencies
- 10 Utilize problem solving skills to resolve a local source water issue

**III. TOPICS:**

1. Global water issues: Past, present and future
2. Source to Tap: A multi-barrier approach to safe drinking water
3. Water supply hydrology

4. Source water quantity
5. Drinking water quality analysis
6. Water quality contamination
7. Impact of climate change on source water
8. Mitigating environmental impact
9. Source water protection planning
10. Government infrastructure and source protection

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

*Watersheds, Groundwater and Drinking Water*  
 Authors: Thomas Harter, Larry Rollins  
 ISBN – 13: 978-1-879906-81-5  
 Copyright: 2008

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

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

Test #1	20%
Test #2	20%
Test #3	20%
Term project	25%
Class assignments	15%
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Total	100%

The following semester grades will be assigned to students:

<b>Grade</b>	<b>Definition</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*