

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: INTRODUCTION TO FIRE SCIENCE
CODE NO. : CJS428 **SEMESTER:** 1
PROGRAM: LAW AND SECURITY ADMINISTRATION
AUTHOR: BOB ROBINSON
DATE: SEPT/00 **PREVIOUS OUTLINE DATED:** SEPT./99

APPROVED:

DEAN

DATE

TOTAL CREDITS: 3
PREREQUISITE(S): None
LENGTH OF COURSE: 3 Hrs/Week
16 Weeks **TOTAL CREDIT HOURS:** 48

Copyright ©1999 The Sault College of Applied Arts & Technology
Reproduction of this document by any means, in whole or in part, without prior written permission of Sault College of Applied Arts & Technology is prohibited.
For additional information, please contact Judi Maundrell, Dean
School of Health & Human Services
(705) 759-2554, Ext. 690

I. COURSE DESCRIPTION:

No fire authority and no amount of legislation, policies or procedures can prevent all fires. Even with all our advances in technology and workplace practices, fires still occur.

Fires are not limited to specific industries, areas of work or places of leisure.

Fires can develop whether you are actively carrying out your duties at work or while you are asleep at home.

This course will teach students that fire awareness can lead to fire prevention, which can minimize fire risks and prevent unplanned fires from occurring. Should you, however, be unfortunate enough to be involved in a fire this awareness may save your life or help save the life of someone else.

This course will be presented in 12 modules. The course modules are listed in the order in which the student should complete them.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Understand the various legislation that pertain to fire safety in the province of Ontario.
 - Ontario Building Code
 - Ontario Fire Code
 - Fire Protection and Prevention Act (1997)
 - Occupational Health and Safety Act
2. Understand the four elements of fire, which are the fire tetrahedrons.
 - Heat
 - Fuel
 - Oxygen
 - Chemical Reaction
3. Understand the chemistry of fire.
 - Flash Points
 - Fire Point
 - Ignition Temperature
 - Flashover
 - Back Draft

4. Understand the characteristics of flammable liquids.
 - Vapour Weight
 - Colour or Odour
 - Specific Gravity
 - Explosive Range
 - Safe Handling and Storage of Flammable Liquids Especially Gasoline
 - Legislation

5. Survive and prevent home fires.
 - Leading causes of death due to fires in the home
 - Leading causes of fire in Sault Ste. Marie homes
 - Design a good home fire prevention plan
 - Know how to handle themselves in fire situations
 - Legislation

6. Understand the characteristics of flammable gases.
 - Explosive range
 - Vapour weight
 - Odour
 - Bleve
 - Safe handling of flammable gases especially propane
 - Legislation

7. Understand the leading causes of electrical fires and accidents, especially in the home.
 - Overloaded circuits
 - Improper fusing
 - Old and tired electrical equipment
 - Preventative methods to stop senseless electrical accidents

8. Understand the need for fire prevention in the work place.
 - The four leading causes of industrial fires
 - The benefits of a good fire prevention program
 - Legislation

9. Understand the need for fire extinguishers as the first line of defence on any fire.
 - How to operate various types of fire extinguishers
 - How to apply agent in the extinguisher on to the fire
 - Capabilities of fire extinguishers
 - How to properly inspect extinguishers at home and work
 - Legislation

10. Understand that properly maintained fire protection systems can save lives and reduce fire loss.
 - Early warning systems (smoke and heat detectors)
 - Automatic sprinkler systems (Wet, dry and deluge)
 - Sprinkler systems components
 - Gas fire suppression systems (Halon 1301, Carbon Dioxide)
 - Legislation

11. Understand the hazards of working in a confined space.
 - What is a confined space?
 - Hazards
 - Procedures
 - Permits
 - Testing and evaluating the atmosphere
 - Personal protective equipment (PPE)
 - Legislation

12. Develop a good emergency plan which identifies what types of emergencies might possible occur and allows for the development of systems to respond adequately to these emergencies.
 - Legislation
 - Types of emergencies
 - Fire safety systems and equipment and human resources
 - Steps of the plan
 - Testing

III. TOPICS:

1. Introduction and Orientation
2. Legislation
3. Facts About Fire
4. Anatomy and Behaviour of Fire
5. Flammable and Combustible Liquids
6. Fire Prevention Week
7. Flammable Gases
8. Electrical Fires and Accidents
9. Industrial Fire Prevention
10. Hand Portable Fire Extinguishers
11. Fire Protection Systems
12. Confined Spaces
13. Emergency Action Plan

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Handouts will be provided by the course instructor.

V. EVALUATION PROCESS/GRADING SYSTEM:

Students will be evaluated through assignments and tests. The overall grade for the course will be calculated on a total of 300 points. These points will be achieved by the following evaluation method:

1. Mid-Term Exam	100	points
2. Two Quizzes, 25 points each	50	points
3. Two Assignments, 25 points each	50	points
4. Final Exam	100	points
Total	300	points

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

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies & Procedures Manual – Deferred Grades and Make-up</i>).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has been impossible for the faculty member to report grades.	

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 instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 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.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. 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, as may be decided by the professor. 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.

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.

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.