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:** 3
PROGRAM:	LAW AND SECURITY ADMINISTRATION
AUTHOR:	John Jones
INSTRUCTOR:	Steve Foster
DATE:	SEPT/04 **PREVIOUS OUTLINE DATED:** SEPT/03
APPROVED:	

_____ _____
                            DEAN   **DATE**

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

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.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1.   **Public Fire Protection**

Potential Elements of the Performance
a. Identify the origins of modern fire protection
b. Describe the evolution of fire protection
c. List the cause for the change from volunteer to public fire departments
d. List and describe the responsibilities of a public fire department
e. Describe the evolution of equipment and protective clothing
f. Discuss the current fire problems in existence
g. Describe the different ranks and responsibilities and organization of the fire department in Sault Ste. Marie
h. Describe the process and requirements of becoming a firefighter in Ontario
i. List and discuss the principles of life safety
j. Describe the code of ethics and firefighter's creed
k. List and describe the myths about fire

2.   **Fire Safety Legislation in Ontario (www.gov.on.ca/OFM/)**
Potential Elements of the Performance
a. List and describe pertinent building code sections for fire
b. List and describe pertinent Occupation Health and Safety Act sections for fire
c. List and describe Ontario Fire Code sections
d. List and describe Fire Protection and Prevention Act sections

3. **Chemistry and Physics of Fire**
   Potential Elements of the Performance
   a. Define and describe the fire triangle and fire tetrahedron
   b. Describe what constitutes an oxidizer
   c. Describe what constitutes a fuel
   d. Describe the three states of matter
   e. Describe the properties or characteristics that affect solids, liquids and gas
   f. Describe the differences between heat and temperature
   g. Describe the four methods of heat transfer
   h. Describe the four classifications of fire
   i. Describe the three phases of fire
   j. Describe the fire extinguishment theory as it applies to each class of fire
   k. Define and explain fire terminology

4. **Fire Protection Systems and Equipment**
   Potential Elements of the Performance
   a. Describe the components of a water supply system
   b. Describe fire detection equipment and their use
   c. Describe various types of fire extinguishments systems and components
   e. Describe the types of extinguishments agents and their uses
   f. Explain how various types of extinguishment agents work to extinguish fire
   g. List and describe fire protection equipment used for personal protection of a firefighter
   h. List and describe the comprehensive fire safety effectiveness model and its sub-components
   i. List and discuss the 10 rules of engagement for structural fires
   j. Define and describe types of fire apparatus and equipment

5. **Fire Prevention**
   Potential Elements of the Performance
   a. Describe the importance of prevention
   b. Describe typical fire prevention activities
   c. List and describe methods of public education as they relate to prevention
   d. List and describe the uses of fire-related statistics
   e. Describe leading causes of fire in industrial and domicile locations
   f. List and describe arson characteristics to determine fire cause

6. **Fire Prevention Surveys**
   Potential Elements of the Performance
   a. Define the term "fire risk analysis"
   b. List and describe the components of a fire prevention/inspection survey
   c. Complete a fire prevention survey

III.   TOPICS:

1. Public Fire Protection
2. Fire Safety Legislation
3. Chemistry and Physics of fire
4. Fire Protection Systems and Equipment
5. Fire Prevention
6. Fire Prevention Survey

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:

Handouts/notes 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	40 marks
2.	Take Home Assignment	20 marks
4.	Final Exam	40 marks
	Total	100 marks

The following semester grades will be assigned to students in post-secondary courses:

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.

Note: For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade.

Students enrolled in Police Foundations or Law and Security Administration programs will require a minimum of 60% (C) as a passing grade in each course.

It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

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 703 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/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.

Re-writes, exams, and assignments
Re-write of tests or exams is not permitted.
Assignments must be typed. double spaced, and have a cover page.
Failure to notify the professor of a test/exam absence prior to the test/exam (valid excuse) will result in a zero grade being assigned. Student's may be requested to provide a doctor's note.

VII.   PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

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.

Mid-term Exam
Learning Objectives #1 and #2

Take-home Assignment
Learning Objective #6

Final Exam
Learning Objectives #3, #4, and #5

Take Home Assignment
Fire Prevention Survey
(20 marks)

1. You, or you and a partner, are to complete a fire prevention survey of either a residence or business.

2. A typed checklist designed (by you) for the particular residence or business will be required.

3. A waiver form will be required in your report.

4. Complete a typed, detailed report outlining (in detail) your questions, findings, schematic maps of the residence or business, recommendations and cost/description of equipment required.

5. Marks are allotted as follows:

      cover page/bibliography/typed format   - 5 marks

      level of detail in report   - 10 marks

      soundness of recommendations   - 5 marks

6. The assignment is due in the class closest to 13 Dec, 2003

7. **Late or non-typed assignments will not be accepted for marking past the due date unless a doctor's note is provided.**

NOTE: Dual enrolled students in CJS 428 and CJS 420 cannot use the same residence or business for both surveys.