

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** Forest Fire Management

**CODE NO. :** NRT103

**SEMESTER:** 1 (fall  
camp)

3 (course)

**PROGRAM:** Forestry Technician

**AUTHOR:** John Clement

**DATE:** Aug 2006    **PREVIOUS OUTLINE DATED:** May 05

**APPROVED:**

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DEAN

\_\_\_\_\_  
DATE

**TOTAL CREDITS:** 3

**PREREQUISITE(S):** None

**HOURS/WEEK** 3

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*For additional information, please contact Colin Kirkwood Dean*  
*School of Technology, Skilled Trades & Natural Resources*  
*(705) 759-2554, Ext. 2688*

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Code No.**I. COURSE DESCRIPTION:**

Students will gain practical knowledge of principles of forest fire management, forest fire ecology and forest fire suppression. Forest fire management will include the use of fire intelligence tools (CFFDRS, FWI, FBP'97, etc.) fire use, fire weather, prescribed burning planning procedures and fire strategies. Fire ecology will focus on fire behaviour and the role of fire in the Boreal forest. Students will gain hands on experience with forest fire suppression equipment and ensure it is retrieved to OMNR standards. This will include: hand tools (back pack pump c/w trombones/ axes/ Pulaskis/ shovels); MKIII pumps; fire hose, chainsaws; prospector tents; naphtha/ propane stoves; lamps and tent heater, as well as coolers, water jugs and kitchen utensils.

In addition, suppression tactics, power pump set ups, troubleshooting, hose lays, Swede sawing, chopping, chain sawing, safety, teamwork, preparedness, camping in prospector tents, cooking, heating and lighting with propane and naphtha are performed and evaluated during a three and a half day field camp.

The course will follow the OMNR S-100 Firefighter training standards, for the most part, with additional readings and other resources provided by the instructor. Students will gain S-102 certification through this course, which is applicable to forest industry standards. Students may wish to pursue the OMNR S-100 certification through a private contractor, independent of the college.

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

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

1. Safely operate and retrieve forest fire suppression equipment to the OMNR S100 standard.

Potential Elements of the Performance:

- Follow equipment inventory control procedures
  - Safely operate, maintain and retrieve forest fire equipment (pumps, hose, hand tools, camp equipment, etc.)
  - Explain the application and limitations of this equipment in various fire management scenarios
  - Sharpen and maintain an axe
  - Roll hose into an melon base on S100 standards
2. Describe and demonstrate fire use and fire suppression tactics and strategies.

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Code No.Potential Elements of the Performance:

- Explain and demonstrate fire line tactics (direct and indirect attack, hose lays, pump set ups, troubleshooting, etc.)
  - Describe the role of aircraft and heavy equipment in fire management
  - Understand the components of the fire line organizational structure
  - Explain fire management operations including preparedness, detection, initial and sustained attack, mop up and retrieval.
  - Demonstrate safe and efficient work habits in a teamwork environment
  - Understand the importance of safety gear, hard hat, steel toe boots, gloves, goggles/ safety glasses, ear plugs, etc.
3. Recognize the role of fire in forested and other ecosystems.

Potential Elements of the Performance:

- Describe basic concepts of fire ecology and fire dependant ecosystems
  - Discuss fire management issues including; fire exclusion, fire use (prescribed burning), the emulation of natural disturbances (forest management) and associated implications for ecosystem health.
4. Use key fire management decision support tools.

Potential Elements of the Performance:

- Categorize fuel types
- Understand and describe the Canadian Forest Fire Danger Rating System
- Recognize factors affecting fire behaviour and use Fire Behaviour Prediction software
- Use Internet resources to find fire intelligence information and data

**III. TOPICS:**

1. Fire equipment operation and field maintenance (pumps, sprinkler kits, drip torches, camp equipment, etc).
2. Fire line tactics (direct, indirect attack, hose lays, pump set-ups, fire line organization). Safe work habits, and use of safety equipment. The use of rotary/fixed wing aircraft and heavy equipment in fire management.

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3. Fire management concepts including fire exclusion, fire uses, (prescribed burning), the emulation of natural disturbances (forest management) and associated implications for ecosystem health.
4. Fire operational procedures (preparedness through to suppression through to retrieval)  
Fire uses (prescribed burning) and fire management planning.  
Internet resources.

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

OMNR S-100 Training Manual

One 2 1/4 or one 2 1/2 pound axe (head weight) with 28" wooden handle

Other readings (provided by instructor)

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

Equipment Retrieval 10%

Axe Sharpening– 5%

Mellon Rolling - 5%

Fall Camp (equipment operation, safety, team work, etc.) – 30 %

Fire Weather Indices assignment – 10%

Mid term Quiz - 10%

Fire Behaviour CD-Rom Assignment – 20%

Final Test – 10%

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

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
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% 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	

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NR circumstances giving a student additional time to complete the requirements for a course (see *Policies & Procedures Manual – Deferred Grades and Make-up*). 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, 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.

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Substitute course information is available in the Registrar's office.

**Health and Safety:**

The operation, transport (carrying) and use of fire equipment in rough terrain and in inclement weather is inherently physically demanding. The use of fire management planning aids (software) poses a significant thinking challenge. It is the responsibility of the student to discuss any potential difficulties with the Learning Assistance Centre. Students must wear appropriate safety gear during field operations (eye, hearing, head, foot protection) and dress appropriate to the weather.

**Attendance:**

Successful completion of the Field Camp (3 1/2 days) is mandatory. Attendance at labs, lectures and field trips is important. There is a great deal of effort in planning, scheduling, budgeting, etc. involved in all aspects of the course. Students missing more than one lecture, one lab and one field trip will receive an "R" grade, unless there are exceptional circumstances.

**Notetaking:**

While the course text is a significant source of information for the course, it is not the only source. Students must take notes summarizing additional material that is presented in class. All material is valid test material.

**Rewrites/Supplementary Exams:**

There will be no rewrites/supplementary exams in this course.

**Assignments:**

All assignments must be submitted on time to pass the course, or be penalized 10% of the total mark per day including weekends. Check each assignment for the due date and time. Anything handed in past this time is late.

Assignments must be word processed and follow other formatting specifications outlined by the instructor. Students are responsible for ensuring that their assignments are received by the instructor.

**Class Conduct:**

Classes will be conducted in the same manner as would a meeting in the work place environment. Eating is not permitted, except for light snacks during group work or study periods.

**VII. PRIOR LEARNING ASSESSMENT:**

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Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

**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.