

## Course Outline

<b>Course Title:</b>	Forest Fire Science		
<b>Course Number:</b>	FSTY12	<b>Approval Date:</b>	2025/9/9
<b>Course Hours:</b>	45 hours	<b>Academic Year:</b>	2025
<b>Academic School:</b>	School of Environmental& Natural Resource Sciences		
<b>Program Co-ordinator or Equivalent:</b>	Benjamin Walters - Benjamin.Walters@flemingcollege.ca		
<b>Dean (or Chair):</b>	Jennifer Hermer - jennifer.hermer@flemingcollege.ca		
	Lorie Blundon - Lorie.Blundon@flemingcollege.ca		

## Course Description

The ecological role of fire in Canada's boreal forest is one of renewal. Many species rely on wildfires for creating conditions to favour their regeneration: this creates a rich, ecologically diverse landscape that supports many species, both tree and animal, on which economies are based. One theme of this course will be to strengthen knowledge and application of initial attack fire suppression tactics and strategies. The role of fire as a silvicultural tool (e.g. prescribed burning) will be the second major theme of this course.

**Prerequisites:** None.

**Corequisites:** None.

**Experiential Learning:** On-Campus Teaching Lab

## Course Delivery Type

**Face to face.**

All course hours are delivered in person at the delivery location specified on the academic timetable.

## Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain Canadian wildfire management approaches at an introductory level and influential factors in fire behaviour and how they affect control responses

2. Explain the use and purpose of prescribed fire and how fire suppression affect natural ecosystems at an introductory level
3. Explain how the Canadian Forest Fire Danger Rating System, the Fire Weather Index System and Fire Behaviour Prediction System, influence wildfire prediction, behaviour, and suppression planning.
4. Explain the purpose and intent of the Forest Fires Prevention Act, the Ontario Ministry of Natural Resources Forestry Modified Operations Protocol and the Ontario Fire Management Strategy at an introductory level.

Students will prepare a technical report and presentation on a faculty approved forest fire related topic.

Costs for learning resources can be found on the Campus Store website, using the links below, or by visiting the Campus Store location at your campus.

- Sutherland: <https://www.bkstr.com/sfleming-sutherlandstore/home>
- Frost: <https://www.bkstr.com/sfleming-froststore/home>

## Assessment Summary

Assessment Task	Percentage
Assignments	40%
Applied Learning	20%
Tests	40%

## Student Success: Policies and Procedures

Mutually, faculty and learners will support and adhere to college Academic Regulations, and Student Rights and Responsibilities. The following policies and guidelines have been developed to support the learning process.

Please click on the link for information about:

- [Academic Integrity \(2-201A\)](https://department.flemingcollege.ca/hr/attachment/7750/download)  
(<https://department.flemingcollege.ca/hr/attachment/7750/download>)
- [Accessibility for Persons with Disabilities \(3-341\)](https://department.flemingcollege.ca/hr/attachment/5619/download)  
(<https://department.flemingcollege.ca/hr/attachment/5619/download>)
- [Grading and Academic Standing \(2-201C\)](https://department.flemingcollege.ca/hr/attachment/7752/download)  
(<https://department.flemingcollege.ca/hr/attachment/7752/download>)
- [Guidelines for Professional Practice: Students and Faculty](https://flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf)  
(<https://flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf>)
- [Student Rights and Responsibilities \(5-506\)](https://department.flemingcollege.ca/hr/attachment/269/download)  
(<https://department.flemingcollege.ca/hr/attachment/269/download>)

If you will need academic accommodations (for example if you have a learning disability, mental health condition such as anxiety or depression or if you had an IEP in high school), please contact the [Accessible Education Services \(AES\)](https://department.flemingcollege.ca/aes/) department (<https://department.flemingcollege.ca/aes/>) to meet with a counsellor.

**Alternate accessible formats of learning resources and materials will be provided, on request.**

## Program Standards

The **Ministry of Colleges and Universities** oversees the development and the review of standards for programs of instruction. The **Ministry of Labour Training and Skills Development** oversees the development and the review of standards for programs of instruction for Apprenticeship training in the province of Ontario. Each college is required to ensure that its programs and program delivery are consistent with these standards, and must assist students to achieve these essential outcomes.

This course contributes to Program Standards as defined by the [Ministry of Colleges and Universities](#) (MCU). Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following elements:

- **Vocational standards** (the vocationally specific learning outcomes which apply to the program of instruction in question);
- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction that contribute to the development of citizens who are conscious of the diversity, complexity and richness of the human experience; and, the society in which they live and work).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program. For further information on the standards for your program, follow the MCU link ([www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/](http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/)).

## Detail Plan

<b>Term:</b>	2025 Fall
<b>Program Co-ordinator or Equivalent:</b>	Benjamin Walters - Benjamin.Walters@flemingcollege.ca
<b>Dean (or Chair):</b>	Jennifer Hermer - jennifer.hermer@flemingcollege.ca Lorie Blundon - Lorie.Blundon@flemingcollege.ca

## Learning Plan

<b>Wks/Hrs Units</b>	<b>Topics, Resources, Learning, Activities</b>	<b>Learning Outcomes</b>	<b>Assessment</b>
Week 1	Course Outline, introductions & expectations Introduction to Fire, Ontario Fire Management Strategy Forest Fire Science Video	1,2,3	
Week 2	Fire Suppression Basics SP 102 Module 1 Completed Forest Fire Science Video / campus walk	1,2,3,	
Week 3	Health & Safety SP Module 2 SP Module 2	1,2,3,	
Week 4	Fire Behaviour SP Module 3 Completed Outdoor exercise	1,2,3,4	
Week 5	Forest Resource Inventory Assignment	1,2	Forest Resource Inventory Assignment 10%
Week 6	Fuels & Forest Fires Mid Term Content Overview SP Module 4 & 5 completed Outdoor exercise	1,2	
Week 7	Forest Fire Science Mid Term SP 102 Modules Due	1,2,3	Forest Fire Science Mid Term Written 10% Testing Center SP 102 Modules 1,2,3,4,5 10% SP 102 Modules 1 to 5 due 10%
Week 8	Independent Learning Week		
Week 9	Modified Operations Protocol Lab, no classes in week 9	1,2,3,4	Modified Operations Protocol Lab due 10%
Week 10	Hose Handling & Water Application Module 6 Completed	1,2,3	
Week 11	Heavy Equipment & Fire, Fire Line Patrol & Mop Up Module 7 & 8 Completed	1,2,3	
Week 12	Aircraft Operations & Radio Use SP Module 9&10, Phonetic Chart Forest Fire Science Video	2,5	SP Forest Firefighter Training Manual Completed Modules 6,7,8,9,10 completed & submitted 10%
Week 13	Canadian Fire Weather Index Lab in class assignment - Student Presentations to begin	1,2,3,4	Canadian Fire Weather Index Lab Assignment 5% Student Report & Presentations to begin
Week 14	Student Presentations & Reports Final Assessment Content Overview	1,2,3,4	Report & Presentations 15% Reports and Presentation due
Week 15	Final Assessment	1,2,3,4	Final Assessment Written 10%, Testing Center Modules 6 to 10 10%

## Assessment Requirements

Assessment Task	Date/Weeks	Course Learning Outcome	Percentage
Forest Resource Inventory Assignment	Week 5	1,2,3	10%
Completion of the Forest Fire SP 102 Manual Modules 1 to 5	Week 7	1,2,3	10%
Mid Term Written & Testing Center Assessment	Week 7	1,2,3	20%
Modified Operations Protocol Assignment	Week 9	1,2,3,4	10%
SP 102 Modules 6 to 10	Week 12	1,2,3	10%
Canadian Fire Weather Index Assignment	Week 13	1,2,3	5%
Student Forest Fire Science Report & Presentation 7.5% for report and 7.5% for presentation	Week 13 / 14	1,2,3,4,5	15%
Final Written & Testing Center Assessment	Week 15	1,2,3,4	20%

Final grades in this course are assigned based on the level of academic achievement which corresponds to the assessment components as cited in this course outline. It is important to note that faculty member(s) will not offer additional evaluation activities beyond those cited in this course outline.

Missed assignments or assignments submitted >72hr after the due date will result in a mark of zero for the assignment.

Late assignments will receive the following penalties: <24hr (-10%); 24-48hr (-20%); 48-72hr (-30%)

All assignments are to be submitted electronically unless otherwise specified by faculty.

## Artificial Intelligence (AI) Statement

**SOME USE.** Generative AI tools (like ChatGPT) can only be used where directed in this course.

It is the responsibility of students to maintain a history of records and supporting documentation to demonstrate their efforts in all academic submissions, even if submission of these is not part of the final academic deliverable.

## Turnitin Statement

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com in support of academic integrity. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

If students choose to opt out of using the software, they must inform their faculty member at the time of the assignment, of their refusal and meet with the faculty to discuss their options. For further information on the use of

Turnitin, please refer to the [Operating Procedure 2-201F](https://department.flemingcollege.ca/hr/attachment/10233/download)  
(<https://department.flemingcollege.ca/hr/attachment/10233/download>)

## Exemption Contact

Dylan Armstrong

## Prior Learning and Assessment and Recognition (PLAR)

PLAR uses tools to help learners reflect on, identify, articulate, and demonstrate past learning which has been acquired through study, work and other life experiences and which is not recognized through formal transfer of credit mechanisms. PLAR options include authentic assessment activities designed by faculty that may include challenge exams, portfolio presentations, interviews, and written assignments. Learners may also be encouraged and supported to design an individual documentation package that would meet the learning requirements of the course. Any student who wishes to have any prior learning acquired through life and work experience assessed, so as to translate it into a college credit, may initiate the process by applying through the Registrar's office. For more information please click on the following link: <http://flemingcollege.ca/admissions/prior-learning-assessment-and-recognition>

## Course Specific Policies and Procedures

It is the responsibility of the student to retain this course outline for future reference. Course outlines may be required to support applications for advanced standing and credit transfer to other educational institutions, portfolio development, PLAR and accreditation with professional associations.

**Synchronous sessions may be recorded. As a result, your image, voice, name, personal views and opinions, and course work may be collected under legal authority of section 2 of the Ontario Colleges of Applied Arts and Technology Act, 2002. This information will be used for the purpose of supporting student learning. Any questions about this collection can be directed to the Privacy and Policy Officer at [freedomofinformation@flemingcollege.ca](mailto:freedomofinformation@flemingcollege.ca) or by mail to 599 Brealey Drive, Peterborough, ON K9J 7B1.**

It is important to submit assignments and projects at the specified time and location. The faculty member(s) for this course will provide the detail. It should be noted that the School of Environmental and Natural Resource Sciences Office, Student Services and Admissions and Records will not accept any assignments or projects.

Final grades in this course are assigned based on the level of academic achievement which corresponds to the assessment components as cited in this course outline. The faculty member(s) will not offer additional evaluation activities beyond those cited in this course outline.

Whatever the reason, missed evaluations and due dates for assignments, including those missed due to illness, will be dealt with by your faculty member.

Cell phone use is not allowed in the classroom; cell phones must be turned off as they are a distraction to the class.

It is the responsibility of every student to uphold academic integrity. Breaches of academic integrity such as plagiarism, cheating etc., will be reported to the Registrar as required by the academic regulations outlined in the student handbook.

Late assignments without a valid explanation or without the student having spoken to the Faculty prior to the due date may receive a grade of zero.

Hardhats, safety boots, safety glasses, hearing protection and work gloves are mandatory for all field exercises.