

FOR 419 / FOR1416
Forest Fire Behaviour and Management in Canada
Class : Tuesdays 10:00-12:00 ESC 4001

This is a tentative schedule, to give students an idea of topics that will be covered; the order of lectures and topics discussed may be changed slightly as term progresses

Week 1 - Tuesday Jan 7

Introduction to the course, marking schemes etc
Forest in Canada: a general overview.
Introduction to Fire Danger Rating

Week 2 - Tuesday Jan 14

Introduction to: Canadian Forest Fire Danger Rating System
-----The Canadian Forest Fire Weather Index System

Week 3 - Tuesday Jan 21

Introduction to predicting fire spread and behaviour
The CFFDRS- Fire Behaviour Prediction System

Week 4 - Tuesday Jan 28

Fire occurrence prediction and its use in fire management
Introduction to general forest fuel moisture and its modelling

Week 5 - Tuesday Feb 4

How do fires ignite? Why? The basics of combustion
The basics of fire spread, fuel heating

Week 6 - Tuesday Feb 11

FOR419-Term test #1 (20%)

Week 7 - Tuesday Feb 18 *** **No lecture - Reading Week**

Week 8 - Tuesday Feb 25 - GUEST LECTURE- Dr Mike Flannigan (U of Alberta)

Fire weather; forest fires and climate change

Week 9 - Tuesday March 4

Fire spread - physical concepts (Rothermel (US) model of surface fire spread)
Van Wagner crown fire spread and fuels modification

Week 10 - Tuesday March 11

More on fuel moisture and its modelling
Measuring fire spread rate in the field

Week 11 - Tuesday March 18 -- GUEST LECTURE - Dr. Bill de Groot (NRCan-CFS)

Fire ecology and impacts - fuel consumption and behaviour modelling

Week 12 - Tuesday March 25- GUEST LECTURE – Tim Lynham
Remote sensing techniques and global wildfire monitoring

Week 13 - Tuesday April 1 - final class
FOR 419 Term Quiz #2 (15%)

Summary

This course will provide students with a general understanding of forest fire in Canada and a detailed exposure to the fundamentals behind forest fire ignition and spread. We will spend time reviewing the structure and operational use of forest fire models and systems used in Canada to help fire management agencies in their decision making processes and delve more deeply into the assumptions and basic reasoning behind them. The goal is for students to be able to obtain a basic understanding of fire and of Canadian operational fire information systems.

Undergraduate(FOR419): Proposed marking scheme

Assignments (2).....20% (10% + 10%)
Readings (~8-10).....15%
Term test 120%
Term test 2.....15%
Term paper/project:.....30% (due April 7)

*** There will be NO final exam.

Graduate course(FOR1416): Proposed marking scheme

Assignments (2).....20% (10% + 10%)
Readings (10).....15%
Case study paper..... 35% (25% paper + 10% seminar presentation) [Due Apr 4]
Literature synthesis:.....30% [Due March 11]

Lateness Penalty: Three percentage marks will be deducted for each day that work is late, including weekends. For instance, if your assignment mark is 40 / 50 and is submitted 2 days late, then a 6% late penalty will be deducted from your mark (and you will get 37/50). Work will not be accepted more than 7 days past the due date (including weekends and holidays).

For questions regarding the course or its content, please contact:
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