

P000064, Forest fire ecology and fire impacts on ecosystems and society, 8.0 Hp

Syllabus

Finalized by: Finalized by: FUN, 2023-11-14, 2023-11-14

Level within study regulation:

Third cycle

Subject:

- Biology

Grading scale:

Pass / Failed

Course language:

Swedish

Entry requirements:

The participants should be admitted as a PhD or Licentiate student and have a Master of science in ecology, forestry, biology, geography, environmental sciences or related field.

Objectives:

After the course, the student will be able to:

Reflect upon and understand the Holocene dynamics of forest fire as the primary factor affecting Nordic vegetation, global biogeochemical cycles.

Discuss modern and likely future trends in dynamics of forest fire, as affected by climate and human land use.

Elaborate on methods designed to study fire at multiple time and spatial scales.

Content:

The course will explore the role of fire in boreal and temperate ecosystems and the subsequent effects on plant/animal communities and the society. The course will provide a broad overview of fire as a disturbance factor in Earth ecosystem and will lay ground for a more in-depth understanding of its impacts in the past and the future. The course will focus predominantly on boreal and temperate systems, although some attention will be given to other biomes where fire plays an important role (e.g. regions with Mediterranean climate and Arctic).

The course content includes *lectures* on the following topics:

- # Global role of fire over the Holocene
- # Role of fire in boreal and temperate ecosystems
- # Fires and forest biodiversity: mixed-severity vs. high-severity fires
- # Interactions of fires with other disturbance agents
- # Carbon dynamics driven by fire activity
- # Dendrochronological analyses of past fire histories
- # Paleochronological proxy of past fire activity: advantages and limitations
- # Fire and humans; economy of fire suppression: is there an optimal solution?
- # Climatology of fire activity in the Nordic region
- # Fire behavior and its modelling
- # Effect of fire on animal populations

Excursions

We plan *three* excursions

Mandatory elements

Participation in Pre week assignment

75 % participation in lectures on site

Participation on the excursions

Written exam

Modes of assessment:

The evaluation of student performance will be carried out as follow:

- (a) The quality of pre- and post-DLE assignments (short literature reviews).
- (b) Assessment of student activity during discussions following lectures and field excursions.
- (c) A written examination.

For the mark “**passed**” the student should actively participate in all course elements, demonstrate good understanding of fire science concepts, passed written exam and complete course assignments. - If a student has failed an examination, the examiner has the right to issue supplementary assignments. This applies if it is possible and there are grounds to do so.

- The examiner can provide an adapted assessment to students entitled to study support for students with disabilities following a decision by the university. Examiners may also issue an adapted examination or provide an alternative way for the students to take the exam.
- If this syllabus is withdrawn, SLU may introduce transitional provisions for examining students admitted based on this syllabus and who have not yet passed the course.
- For the assessment of an independent project (degree project), the examiner may also allow a student to add supplemental information after the deadline for submission. Read more in the Education Planning and Administration Handbook.

Organisation:

Department of Southern Swedish Forest Research Centre

Supplementary information

Other information:

- The right to participate in teaching and/or supervision only applies for the course instance the student was admitted to and registered on.
- If there are special reasons, students are entitled to participate in components with compulsory attendance when the course is given again. Read more in the Education Planning and Administration Handbook.