

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: BIO 430		Number of Credits: 3 Course credit policy (105)															
Course Full Title: Forest Ecology Course Short Title: <i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>																	
Faculty: Faculty of Science		Department (or program if no department): Biology															
Calendar Description: An overview of the structure and function of forest ecosystems, with a special reference to forests of British Columbia and Canada. An introduction to the interaction of forest organisms with their physical and biotic environment.																	
Prerequisites (or NONE):		75 university-level credits, including BIO 210.															
Corequisites (if applicable, or NONE):																	
Pre/corequisites (if applicable, or NONE):																	
Antirequisite Courses <i>(Cannot be taken for additional credit.)</i> Former course code/number: BIO 420D Cross-listed with: Dual-listed with: Equivalent course(s): BIO 420D <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>		Special Topics <i>(Double-click on boxes to select.)</i> This course is offered with different topics: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i>															
		Independent Study If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit															
		Transfer Credit Transfer credit already exists: <i>(See bctransferguide.ca.)</i> <input type="checkbox"/> No <input type="checkbox"/> Yes Submit outline for (re)articulation: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i>															
Typical Structure of Instructional Hours <table border="1"> <tr> <td>Lecture/seminar hours</td> <td>35</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td></td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td>10</td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td>Total hours</td> <td>45</td> </tr> </table>		Lecture/seminar hours	35	Tutorials/workshops		Supervised laboratory hours		Experiential (field experience, practicum, internship, etc.)	10	Supervised online activities		Other contact hours:		Total hours	45	Grading System <input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit	
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Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		Maximum enrolment (for information only): 24 Expected Frequency of Course Offerings: Once every two years															
Department / Program Head or Director: Gregory Schmaltz		Date approved: September 2021															
Faculty Council approval		Date approved: October 8, 2021															
Undergraduate Education Committee (UEC) approval		Date of meeting: January 28, 2022															

Learning Outcomes:

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

1. Illustrate the role and significance of forests.
2. Apply the ecosystem concept and ecological succession to the forests of British Columbia and Canada.
3. Critically discuss the role of climate, solar radiation, temperature, wind, soil, water, and fire on our forests.
4. Differentiate between the various forest classification systems.
5. Analyze how models are used to predict forest change and sustainability.
6. Discuss the indigenous use of fire as a management tool for maintaining forest biodiversity.
7. Evaluate the role of nutrient cycling in forest ecosystems.
8. Predict how forests may change over time.
9. Assess how climate change will impact forests.
10. Measure the biodiversity of a local forest.
11. Describe the sustainable use of forests by indigenous people.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.)*

Lecture, demonstration, small group practice, discussion, audio-visual presentation, use of models and charts. A field trip to UBC research forest with a tour of current forest research sites hosted by a forestry researcher may be required.

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials *(If more space is required, download Supplemental Texts and Resource Materials form.)*

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1. Aduardo Hapke	Forest Ecology	X	CALLISTO REFERENCE	2017
2.				
3.				
4.				
5.				

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Use this section for supplies and materials for all sections of this course.

Typical Evaluation Methods and Weighting

Final exam:	45%	Assignments:	%	Field experience:	10%	Portfolio:	%
Midterm exam:	20%	Project:	%	Practicum:	%	Group project:	10%
Term paper:	15%	Lab work:	%	Shop work:	%	Total:	100%

Details (if necessary):

Typical Course Content and Topics

- Introduction to forests of the world and forest ecology
- Ecology and the ecosystem concept
- Energy relations and biogeochemistry
- Forest ecosystem classification: students will go to the woodlot area of UFV campus and analyze the vegetation and identify the forest ecosystem classification appropriate for the area.
- Environmental influences - Solar radiation: students will go into the forest on UFV campus and measure solar radiation at various heights and types of vegetation.
- Temperature and wind
- Water and soil
- Fire and environmental gradients: students will read Hoffman KM, Davis EL, Wickham SB, Schang K, Johnson A, Larking T, Lauriault PN, Le NQ, Swerdager E, Trant AJ. Conservation of Earth's biodiversity is embedded in Indigenous fire stewardship. Proceedings of the National Academy of Sciences. 2021 Aug 10;118(32). Indigenous use of fire, and will discuss how including indigenous peoples can enhance the management of forests.
- Succession
- Models in forestry
- Forest genetics
- Community ecology