



COURSE IMPLEMENTATION DATE: May 2006
 COURSE REVISED IMPLEMENTATION DATE: September 2012
 COURSE TO BE REVIEWED: December 2017
(six years after UEC approval) (month, year)

OFFICIAL UNDERGRADUATE COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.
 Shaded headings are subject to change at the discretion of the department – see course syllabus available from instructor

BIO 430	Faculty of Science/Biology	3
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS
Forest Ecology		
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

This course provides an integrative, interdisciplinary discussion of the structure and function of forest ecosystems, with a special reference to forests of British Columbia and Canada. Topics to be covered will include the following: the concept of ecosystem studies; global and local variations in forest type; forest ecosystem classification; processes controlling ecosystem structure and function; disturbances, succession, and ecosystem function of boreal forests; and computer modeling in ecosystem studies.

PREREQUISITES: BIO 210 and one of the following: 75 university-level credits, BIO 307, BIO 330 or BIO 410.
 Note: As of September 2013, prerequisites will change to: 75 university-level credits, including BIO 210.

COREQUISITES:
 PRE or COREQUISITES:

SYNONYMOUS COURSE(S):

- (a) Replaces: BIO 420D
- (b) Cross-listed with: _____
- (c) Cannot take: BIO 420D for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: 45

STRUCTURE OF HOURS:

Lectures: 25 Hrs
 Seminar: 20 Hrs
 Laboratory: _____ Hrs
 Field experience: _____ Hrs
 Student directed learning: _____ Hrs
 Other (specify): _____ Hrs

TRAINING DAY-BASED INSTRUCTION:

Length of course: _____
 Hours per day: _____

OTHER:

Maximum enrolment: 24
 Expected frequency of course offerings: once every two years
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only) Yes No
 WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department) Yes No
 TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE: Yes No

Course designer(s): <u>Sharon Gillies</u>	Date approved: <u>July 25, 2011</u>
Department Head: <u>Sharon Gillies</u>	Date of meeting: <u>September 16, 2011</u>
Supporting area consultation (Pre-UEC)	Date approved: <u>November 18, 2011</u>
Curriculum Committee chair: <u>Norm Taylor</u>	Date approved: <u>December 2, 2011</u>
Dean/Associate VP: <u>Ora Steyn</u>	Date of meeting: <u>December 16, 2011</u>
Undergraduate Education Committee (UEC) approval	

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 in our forests
- 4) differentiate between the various forest classification systems
- 5) analyze how models are used to predict forest change and sustainability
- 6) evaluate the role of nutrient cycling
- 7) assess the impact of human disturbance upon forest ecosystems
- 8) critically analyze current literature in forest ecology and prepare and present a seminar based on current literature

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

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 will be mandatory.

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Examination(s) Portfolio assessment Interview(s)

Other (specify):

PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS: *[Textbook selection varies by instructor. Examples for this course might be:]*

Kimmins, P.J. Forest Ecology, Second edition, Prentice Hall, NJ

Library Resources:

Books

Forest ecology, Barnes, Burton Verne

Forest dynamics : an ecological model, Botkin, Daniel B.

Principles and practices in plant ecology : allelochemical interactions, Foy, Chester L.

Spatial pattern analysis in plant ecology, Dale, Mark R. T. (Mark Randall Thomas)

Alpine plant life : functional plant ecology of high mountain ecosystems, Körner, Christian

Terrestrial plant ecology 3rd ed., Barbour, Michael G.

Plant physiological ecology, Lambers, H.

Principles of ecology in plant production, Sinclair, Thomas R.,

Ecology and control of introduced plants, Myers, Judith H.

Ecosystem dynamics of the boreal forest : the Kluane project, Boonstra, Rudy

A cut above : ecological principles for sustainable forestry on BC's coast, Drever, Ronnie, 1968-

Ecology and management of forest soils.,3rd ed., Fisher, Richard F.

Pilot analysis of global ecosystems : forest ecosystems, Matthews, Emily.

From science to management and back : a science forum for southern interior ecosystems of British Columbia,

Innes, Trina Anne

The North American forests : geography, ecology, and silviculture, Walker, Laurence C.

Reading the forested landscape : a natural history of New England, 1st pbk. ed., Wessels, Tom

Journals

Plant Species

Plant Sciences

Plant Journal

Restoration Ecology

Journal of Ecology

SUPPLIES / MATERIALS:

STUDENT EVALUATION: *[An example of student evaluation for this course might be:]*

Midterm	20%
Final exam	35%
Term paper	25%
Group project	20%

COURSE CONTENT: *[Course content varies by instructor. An example of course content might be:]*

Sample Lecture & Seminar Schedule

- Week 1 - Introduction to Forestry and Forest Ecology
- Week 2 - Ecology and the Ecosystem Concept
- Week 3 - Energy Relations and Biogeochemistry
- Week 4 - Ecosystem Classification
- Week 5 - Environmental Influences - Solar radiation
- Week 6 - Temperature & Wind
- Week 7 - Water & Soil
- Week 8 - Fire & Environmental Gradients
- Week 9 - Succession
- Week 10 - Models in Forestry
- Week 11 - Forest Genetics
- Week 12 - Population Ecology
- Week 13 - Community Ecology