UNIVERSITY OF THE FRASER VALLEY

OFFICIAL UNDERGRADUATE COURSE OUTLINE (page 1)

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

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 - Ecocsystem 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