UNIVERSITY COLLEGE of the FRASER VALLEY

COURSE IMPLEMENTATION DATE: May 2006
COURSE REVISED IMPLEMENTATION DATE:
COURSE TO BE REVIEWED: November 2009
(Four years after UPAC final approval date) (MONTH YEAR)

OFFICIAL 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 and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT:	**Faculty of Science, Health & Human Services/Biology**	
BIO 430	**BIO 420d**	**3**
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV 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 BIO 307, BIO 330 or BIO 410
COREQUISITES:

SYNONYMOUS COURSE(S)
(a) Replaces: **BIO 420d** *(Course #)*
(b) Cannot take: **BIO 420d** *(Course #)* for further credit.

SERVICE COURSE TO: *(Department/Program)* *(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:

MAXIMUM ENROLLMENT: **36**
EXPECTED FREQUENCY OF COURSE OFFERINGS: **once every two years**

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

AUTHORIZATION SIGNATURES:

Course Designer(s): Sharon Gillies
Chairperson: Gillian Mimmack *(Curriculum Committee)*
Department Head: Barbara Moon
Dean: Jackie Snodgrass
UPAC Approval in Principle Date:
UPAC Final Approval Date: November 25, 2005

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

The objective of this course is to familiarize students with the important concepts (such as disturbance and succession), and methods used to understand our forests. Wherever possible, examples from local forest types will be used. After successfully completing this course, students will be able to describe and critically discuss:

1) the role and significance of forests
2) the ecosystem concept and ecological succession in forests
3) the role of climate; solar radiation, temperature, wind, soil, water, and fire in our forests
4) how forests are classified
5) how models are used to predict forest change and sustainability
6) the role of nutrient cycling and the impact of human disturbance affects forest ecosystems

Additional Skills:

Students will also be able to critically analyze current literature in forest ecology and prepare and present a seminar based on current literature.

METHODS:

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.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check:) ☒ Yes ☐ No

METHODS OF OBTAINING PLAR:

Course challenge: The student must challenge both lecture and lab components of the course by writing an examination for each.

The student will be provided with a copy of the syllabus and information how to obtain a copy of the current text and lab manual.

The student will also be given information about exam style and expected standards.

The student can sit the examination for the lecture portion of the course at a time convenient to both student and instructor.

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts 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