UNIVERSITY COLLEGE of the FRASER VALLEY

COURSE IMPLEMENTATION DATE: September 2007
COURSE REVISED IMPLEMENTATION DATE:
COURSE TO BE REVIEWED: May 2011
(Four years after implementation 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: **Biology**

BIO 410	**N/A**	**4**
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS

Plant Ecology
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This course provides students with an understanding of factors, biotic and abiotic, responsible for vegetation distribution patterns across landscapes. In particular, lectures will address plants at the individual, population, and community levels and demonstrate how plants interact with their physical environment – soils, water, and climate. Field trips and laboratory exercises will introduce methodologies of vegetation sampling, analysis, and interpretation. Field trips outside of class time are required.

Note: This course is offered as both BIO 410 and GEOG 410. Students may take only one of these for credit.

PREREQUISITES: BIO 210, and one of BIO 307, BIO 330 or BIO 340; or GEOG 317
COREQUISITES: **None**

SYNONYMOUS COURSE(S)
(a) Replaces: _____ *(Course #)*
(b) Cannot take: **GEOG 410** *(Course #)* for further credit.

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

TOTAL HOURS PER TERM: **90**
STRUCTURE OF HOURS:

Lectures:	**45**	Hrs
Seminar:		Hrs
Laboratory:	**45**	Hrs
Field Experience:		Hrs
Student Directed Learning:		Hrs
Other (Specify):		Hrs

TRAINING DAY-BASED INSTRUCTION
LENGTH OF COURSE: _____
HOURS PER DAY: _____

MAXIMUM ENROLLMENT: **24**
EXPECTED FREQUENCY OF COURSE OFFERINGS: **once every 2 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 and Jonathon Hughes
Chairperson: Art Last *(Curriculum Committee)*
Department Head: Barbara Moon
Dean: Wanda Gordon
PAC Approval in Principle Date:
PAC Final Approval Date: May 25, 2007

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

After completing this course, the successful student will be able to:
a) utilize various methods of sampling vegetation in the field, and select appropriate sampling methods;
b) assess and describe a plant community;
c) conduct an analysis and interpretation of field data and apply theoretical and applied aspects of plant ecology to local ecosystems;
d) measure the biotic and abiotic influences on plant distribution;
e) predict how a plant community might change over time;
f) use GSP systems, and utilize GIS data in their analysis of ecosystems.

METHODS:

Course format will include lectures, labooratory sessions, and field trips. Laboratory exercises and assignments are designed to supplement theory presented during lectures.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

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

METHODS OF OBTAINING PLAR:

Examinations.

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

Gurevitch, J., Scheiner, S.M., and Fox, G.A., Sinauer Associates, Inc., 2006. The Ecology of Plants, Second Edition, 518 pages, 416 illustrations.

Pojar, J. and MacKinnon, A. (eds.). 1994. Plants of Coastal British Columbia. Vancouver, B.C. Lone Pine.

Lab Manual will be provided.

Library Resources:
Books:
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.

Journals:
Plant Species
Plant Sciences
Plant Journal
Restoration Ecology
Journal of Ecology

SUPPLIES / MATERIALS:

Laboratory notebook.
Field-trip fee.

STUDENT EVALUATION:

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

Midterm	20%
Final exam	30%
Laboratory exercises	30%
Field project	20%

COURSE CONTENT:

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

Lecture schedule:

Week	Lecture and lab topic
1	Introduction and history of the science
2	Autecology - ecology of the individual
3	Abundance and distribution
4	Populations
5	Synecology - communities, classification, and ordination
6	Ecosystems - an introduction to succession
7	Primary and secondary succession
8	Plant-environment interactions
9	Mineral cycles
10	Soils
11	Water
12	Climates and ecosystems, use of geographic information systems
13	Paleoecology - reconstruction of ancient environments

Week	Labs
1	Plant identification
2	Plant identification
3	Pollination
4	Competition
5	Biodiversity indices
6	Vegetation description and analysis, Braun-Blanquet
7	Species distribution along environmental gradients
8	Classification and ordination
9	Soil profiles
10	Water tables
11	Biotic legacy, seed banks
12	GSP and GIS