



COURSE IMPLEMENTATION DATE: January 2007
 COURSE REVISED IMPLEMENTATION DATE: September 2013
 COURSE TO BE REVIEWED: September 2019
(six years after UPAC 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

GEOG 317	Geography	4
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS
	Biogeography	
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

Biogeography is the study of living things in space and time that integrates concepts and theory from geography, biology, geology, paleontology, and ecology. After an initial review of the history of biogeography, students will be introduced to patterns of distribution; mechanisms responsible for today's biodiversity; island biogeography; communities and ecosystems; and the influence of physical processes on species distribution. The course will also examine extinctions and radiations and the relevance of these processes for ecological forecasts. Field trips outside of class time are required.

Note: Students with credit for BIO 317 cannot take this course for further credit.

PREREQUISITES: One of GEOG 201, GEOG 202, or BIO 210.
 COREQUISITES:
 PRE or COREQUISITES:

SYNONYMOUS COURSE(S):

- (a) Replaces: _____
- (b) Cross-listed with: BIO 317
- (c) Cannot take: BIO 317 for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: 75

STRUCTURE OF HOURS:

Lectures: 39 Hrs
 Seminar: _____ Hrs
 Laboratory: 12 Hrs
 Field experience: 24 Hrs
 Student directed learning: _____ Hrs
 Other (specify): _____ Hrs

TRAINING DAY-BASED INSTRUCTION:

Length of course: _____
 Hours per day: _____

OTHER:

Maximum enrolment: 25
 Expected frequency of course offerings: _____
(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>Dr. Jonathan Hughes</u>	Date approved: <u>February 2013</u>
Department Head: <u>Dr. Michelle Rhodes</u>	Date of meeting: <u>February 24, 2013</u>
Supporting area consultation (CWC)	Date approved: <u>March 22, 2013</u>
Curriculum Committee chair: <u>Dave Fenske</u>	Date approved: <u>March 22, 2013</u>
Dean/Associate VP: <u>Lucy Lee</u>	Date of meeting: <u>April 26, 2013</u>
Undergraduate Program Advisory Committee (UEC) approval	

LEARNING OUTCOMES:

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

- Explain the mechanisms that regulate the distribution of organisms and be able to identify and compare biogeographical regions and discuss how these regions might change over time;
- Demonstrate knowledge about geologic time, evolution, ecology, and systematics in written and oral presentation;
- Use relevant data presentation software (e.g., Illustrator, Excel, Powerpoint);
- Synthesize information from different disciplines;
- Build on advanced critical thinking, computation, and writing skills to produce scientific reports and oral presentations.

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

Course format will include lectures, presentations, discussions, laboratory sessions, and field trips.

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. An example of texts for this course might be:]

Lomolino, M.V., et al. 2010. Biogeography (4th ed.). Sinauer Associates, Inc., 878 pp.
Articles from peer-reviewed journals and government reports.

SUPPLIES / MATERIALS:

Laboratory and field notebook.
Field-trip fee.

STUDENT EVALUATION:

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

Midterm exam:	25%
Presentation:	10%
Data analysis report:	30%
Final exam:	30%
Participation:	5%

COURSE CONTENT:

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

When offered as a lecture course with field and laboratory components:

Week 1: Introduction
 Discussion
 Climate classification
 Geologic time and shifting continents
 Natural selection
 Lab: Practice working with data

- Week 2:** Beyond species richness
Data analysis and data sets
Lab: Practice working with data
- Week 3:** Field trip to UBC Research Forest – Fire history
<Biogeoclimatic zones: communities and ecosystems>
- Week 4:** Communities, ecosystems, and BEC
Global diversity gradients
Lab: Fossil pollen data analysis
- Week 5:** Field trip to Lodgepole pine forest near Chilliwack Lake
- Week 6:** Quaternary biogeography
Holocene biogeography of the Fraser Lowland
Lab: Skeleton plots
- Week 7:** How do biological invasions alter diversity patterns?
Midterm-exam review (includes plant ID)
Field trip to Mill Lake (invasive plants)
- Week 8:** Midterm exam
- Week 9:** Field trip to Derby Reach Regional Park – Wetlands
- Week 10:** Field trip to Sumas Mountain quarry – Huntington Fm.
- Week 11:** Area cladistics: phylogeography and diversification
Deep time
Lab: Cladistics
- Week 12:** Marine center of origin
Pattern and process in marine biogeography

When offered as a hybrid online course with field and laboratory components:

Using problem-based learning, field and laboratory components are combined with online instruction (hybrid model). An example problem-based exercise is to have students forecast the distribution of species in response to future climate change or develop conservation strategies in response to development or natural disturbance.

The course content listed above will be learned by students as they use inquiry-based methods to answer a suite of questions relevant to a specific problem.

Laboratory and field exercises will be completed on a weekly basis during regular class times over the course of the semester; in a condensed field-school format over one week; or in clusters of meetings over the course of the semester. Delivery format depends on when the course is offered.