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Course exists as BIOL F475 currently.

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**BIOL F475 Vegetation Description and Analysis**

**2 Credits Offered Fall Even-numbered Years**

**Methods of vegetation science including sampling, classification, gradient analysis, ordination, field description and mapping. Field trips to the plant communities of interior Alaska. Special fees apply. Prerequisites: BIOL F474 or other general ecology course; permission of instructor. (1+3)**

**JUSTIFICATION FOR ACTION REQUESTED**

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please

address this in your response. This section is to be self-administered. If you have any questions, please contact the Registrar's Office at 480-480-1234.

Are you increasing the amount of material covered in the class? If you don't answer this, is it because the material is

**ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)**

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|  | Date |  |
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Signature, Chair, Program/Department of:

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Signature, Chair, College/School Curriculum Council for:

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Signature, Dean, College/School of:

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NOTE: Course currently exists as BIOL F475. Numbering to be determined.

**Preliminary Syllabus for MAJOR COURSE CHANGE,  
BIOL 465/665 Vegetation Description and Analysis Fall 2012**

XXXXXXXX numbers to be determined.

**1. Course Information**

**Title:** Vegetation Description and Analysis

**Course number:** BIOL 465 / 665

**Credits:** 3 credit-hours 2 lecture + 3 laboratory

**Prerequisites:** BIOL 115, BIOL 116, BIOL 220 Introduction to Plant Biology, or BIOL 271

**Principles of Ecology, or BIOL 331 Plant Systematics, or permission of instructor**

3 Credits Offered Fall Even-numbered Years

Methods of vegetation science including background lectures, field trips, and computer laboratories. Computer analysis includes database construction (Turboveg), table analysis

~~Prerequisites: BIOL 220 or BIOL 230 or~~

BIOL 271, or BIOL 331 or permission of instructor. Stacked with BIOL F665 (2+3)

This course will give students a broad overview of concepts and methods of description and analysis of plant community data. These methods of vegetation science include vegetation sampling, classification, and gradient analysis, and exploration of the relationship of species distributions to their environment. Most of the class will be devoted to obtaining comprehensive

MD&E = Mueller-Dombois, L. D. and Ellenberg, H., 1974: *Aims and Methods of Vegetation Ecology*. Boca Raton: CRC Press.

McC&G = McCune, B. and Grace, J., 2002: *Analysis of ecological communities*. Gleneden Beach, Oregon: MjM Software Design, 300 pp.

| Date | Topics/Activities | Reading assignments | Assignments DUE |
|------|-------------------|---------------------|-----------------|
|------|-------------------|---------------------|-----------------|

|                |  |  |  |
|----------------|--|--|--|
| Mon.<br>6 Oct. | <i>Field lab 5<br/>Forest sampling methods</i> | <i>Bring field gear as for Lab 1<br/>(but warmer!)</i> |  |
|----------------|--|--|--|



|                 |  |   |   |
|-----------------|--|---|---|
|                 | <b>relevé data - TURBOVEG</b><br><i>Student presentation #1</i>  |   |   |
| Mon.<br>10 Nov. | <b>Lab 10 - Computer lab:</b><br><b>Ordinations with environmental data, DCA, CCA</b>  |   |   |
| Wed.<br>12 Nov. | <b>Ordination: canonical correspondence analysis, nonmetric multi-dimensional scaling,</b><br><i>Student presentation #2</i> | <b>Paper #9</b><br>KC Chapter 6, pp. 227-244<br>McC&G Chapters 16, 21 | <b>Paper #9 summary due</b>                   |
| Mon.<br>17 Nov. | <b>Numerical classification</b><br><i>Student presentation #3</i>  |   | <b>Lab Report #4 due</b><br><b>Ordination</b> |
| Mon.<br>17 Nov. | <b>Lab 11 - Computer lab: NMDS, cluster analysis, TWINSpan</b>   |   |   |
| Wed.<br>19 Nov. | <b>Table sorting methods and software TURBOVEG, JUICE</b><br><i>Student presentation #4</i>                                  | <b>Paper #10</b><br>KC Chapter 8<br>McC&G Chapters 10-12, 25          | <b>Paper #10 summary due</b>                  |
| Mon.<br>24 Nov. | <b>Review of ordination &amp; classification methods</b><br><i>Student presentation #5</i>                                   | McC&G Chapter 22  | <i>Topics for final paper approved</i>        |
| Mon.<br>24 Nov. | <b>Lab 12 - Computer lab: Table sorting, analyses for final paper</b>  |   |   |

locations. Students are expected to participate in class discussions. Both attendance and participation will contribute to the final grade.

**Reading assignments:** There will be 10 journal papers to read for the course. Each paper will describe research using one or more of the techniques learned in class. Short answers to a few questions about the papers will be due each Wednesday. Additional reading that supplements the material covered in class will be assigned. This reading is recommended to broaden students' understanding of the topics and fill any gaps in students' background, and is required if a student is having difficulty understanding a topic. Graduate students will lead class discussions of the paper and will be expected to participate more actively in the discussion.

**Lab write-ups:**

There will be 8 lab write-ups. These are designed to give the students an opportunity to apply

the oral and written presentations summarizing the data.

**Vegetation Description & Analysis Notebook:**

Please speak with me if you have any questions about how to properly use other people's work.

## 9. Evaluation

### Grades:

| Grades will be based on the following criteria: | Undergraduate | Graduate  |
|---|---------------|-----------|
| Lab report assignments (5 @ 20 pt each)         | 100           | 100       |
| Journal article analysis (10)                   | 100           | 200       |
| Vegetation description & analysis notebook      | 150           | 150       |
| Oral presentation to class                      | 100           | 200       |
| Final paper                                     | 100           | 200       |
| Class participation                             | <u>50</u>     | <u>50</u> |
| TOTAL   | 600           | 900       |

Note: These criteria may be modified somewhat as the course progresses. Final grades will be as follows: greater than or equal to 90% = A; 80-89% = B; 70-79% = C; 60-69% = D; < 60% = F.

points will be deducted for every day an assignment is late.

## 10. Support Services