Syllabus

BIOL 697
Individual Study: Vegetation Analysis
3 or 2 credits – Fall 2017

Note: Students participating in the field trip July 27-Aug 3 and lectures will receive 3 credits. Those participating only in the lecture portion will receive 2 credits.

Instructor: Skip Walker
Office: Arctic Health Bldg Room 254
Office hours: Open
Office phone: 474-2460
Email: dawalker@alaska.edu

Required text:

Recommended text:

Supplemental Readings: Readings from the primary literature will be assigned throughout the semester. The content of the readings will be determined at the first session of the course by considering the educational needs of the student. Those readings will be discussed during weekly meetings.

Course description: Concepts and methods of vegetation sampling, classification, gradient analysis. The course teaches students a comprehensive set of sampling and analysis methods used in vegetation science, providing them with practical skills applicable for research and management. Students collect, analyze and interpret vegetation data collected in the Brooks Range, Alaska.

Course goals: The goals for the course are: (1) to provide students with a comprehensive set of sampling and analysis methods used in vegetation science, and (2) to develop an understanding and appreciation of vegetation, its composition, structure and function, its wide diversity, and role in local, regional and global ecosystems.
Learning outcomes: The student will be able to synthesize, analyze, and synthesize field typical vegetation plot data to aid the completion of thesis work, or to provide a more rounded general knowledge of vegetation in relationship to permafrost and the Arctic physical environment.

Instructional methods: The student will attend specific lectures in WLF 421 and will read papers from the primary literature when not attending lectures. Course material will be presented via PowerPoint presentations available on the Web. Written and oral communication with instructor will be a key factor in assessing student comprehension.

Evaluation: The student will complete three major graded components.
1. Table analysis of the field data
2. Ordination analysis of the field data
3. Independent paper that uses the analyses to discuss a topic related to Arctic Vegetation or Arctic Ecosystems
4. Oral presentation of the paper

Grading:
Table analysis 20%
Ordination analysis 30%
Final paper 30%
Oral presentation 20%

Grading scheme:
A ≥90%
B 80-89%
C 70-79%
D 60-69%
F <60%

Course policies:
- The student is expected to meet at least weekly with the instructor and is expected to attend those lectures in BIOL 697 assigned by the instructor.
- Plagiarism will not be tolerated and will result in a failing grade on the assignment.
- The student may consult with others concerning preparation of the paper but must write the paper herself without assistance.

Lecture topics:
Vegetation Sampling Methods
Site factors and soils
Direct gradient analysis
Indirect gradient analysis (ordination)
**Potential reading topics:**

- Environments at the P-H transition
- Younger Dryas in Alaska
- Megafaunal extinctions and the overkill hypothesis
- Human reliance on large mammals for subsistence
- Changing climates and megafaunal response

**Lecture schedule:**

- Week 1: Set goals and learning outcomes; assign book for reading
- Week 2: Field sampling, focused on plot-based (relevé) method
- Week 3: Voucher collections, Plant identification, overview Arctic species
- Week 4: Voucher collection identification (cont’)
- Week 5: Soil analysis and site factors
- Week 6: Direct gradient analysis
- Week 7: Indirect gradient analysis, similarity indices, polar ordination
- Week 8: Indirect gradient analysis, Principal components analysis
- Week 9: Indirect gradient analysis, correspondence analysis, DCA
- Week 10: Indirect gradient analysis, PC-Ord, ordination analysis due
- Week 11: Table analysis, Introduction Thanksgiving holiday
- Week 12: Sorted Table analysis
- Week 13: Braun-Blanquet approach to vegetation classification
- Week 14: Final paper due, and student oral presentations.

**Academic dishonesty:** The UAF Student Code of Conduct is presented online at [www.uaf.edu/catalog/catalog_08-09/academics/regs3.html#Student_Conduct](http://www.uaf.edu/catalog/catalog_08-09/academics/regs3.html#Student_Conduct) and in the 2008-09 UAF Catalog. You will be expected to abide by that code. No collaboration among students will be allowed on exams and quizzes. Collaboration on projects will be permitted only to the extent I describe. Copying or paraphrasing another student’s writing is a violation of the Student Code. Copying or paraphrasing published material without proper attribution is plagiarism and is a serious academic offense. If you are unsure what constitutes plagiarism, see the following web page or see me.

[www.uaf.edu/library/instruction/handouts/Plagiarism.html](http://www.uaf.edu/library/instruction/handouts/Plagiarism.html)

Evidence of academic dishonesty will be presented to the UAF Director of Judicial Services and may result in an F for the course and/or expulsion from the University.

**Disabilities:** If you have a learning disability, please inform me before the end of the second week of class. If you have not already contacted the UAF Center for Health and Counseling (474-7043; TTY 474-7045) to document your disability, please do so at your earliest opportunity. They will work with me to provide reasonable and appropriate accommodations.
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