Texas A&M University
Departmental Request for a Change in Course
Undergraduate ♦ Graduate ♦ Professional
• Submit original form and attachments •

1. This request is submitted by the Department of Geography.

2. Course prefix, number and complete title of course: GEOG 624: Biogeography: Theory and Methods

Attach a brief supporting statement for changes made to items 3a thru 3d, and 5 below.

3. Change requested
   a) Prerequisite(s): From ___________________________ To ___________________________
   b) Withdrawal (reason) ___________________________________________________________
   c) Cross-list with ________________________________________________________________

   Cross-listed courses require the signature of both department heads.

   d) Change in course title and description. Enter complete current course title and current course description; complete proposed course title and proposed course description in items 4 and 5.

   e) Change in credit/contact hours. Complete item 6b. Underscore change(s). Attach a course syllabus.

4. Complete current course title and current course description: Plant Geography: Differences and similarities among the various floras and vegetations of the world; composition, local productivity, distributions and plant migrations of taxa at different levels; studies of man's impact may be included; research seminar system used; particular emphasis of the course varies from year to year. Field trip. Departmental fees may be assessed to cover costs.

5. Complete proposed course title and proposed course description (not to exceed 50 words):

6. a) As currently in course inventory:
<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 624</td>
<td>Plant Geography</td>
<td></td>
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<tr>
<td>Lect.</td>
<td>Lab</td>
<td>SCH</td>
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<tr>
<td>0</td>
<td>3</td>
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</tbody>
</table>
   
   b) Change to:
<table>
<thead>
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<th>Prefix</th>
<th>Course #</th>
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</tbody>
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   Level 16

Approval recommended by:

Head of Department: ___________________________ Date: 10/01/07
Chair, College Review Committee: ___________________________ Date: 10/07/07
Dean of College: ___________________________ Date: 10/17/07

Submitted to Coordinating Board by:

Dean of College: ___________________________ Date: ___________________________ Effective Date: 10/19/07

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS – 04/07
MEMORANDUM

TO: Professor Steven Whisenant, Head Department of Ecosystem Science and Management

FROM: Douglas Sherman, Head Department of Geography

DATE: October 10, 2007

SUBJECT: GEOG 624: Proposed title and catalogue change

The Department of Geography is proposing to change the course title and catalogue description for GEOG 624: Plant Geography. I have attached the proposed changes for your consideration. Because of your Department’s topical interests in biogeographical applications, I am asking for your endorsement of these changes.

If you have issues or concerns with this proposal, please let me know so that we can discuss any necessary compromises. Thanks for your consideration.
The content of Geography 624: Plant Geography has changed considerably since it was originally proposed. New faculty have joined the Geography Department and the original instructor of this course has retired. The description of the course has therefore become outdated. To represent the current course content, the title of the course should be changed to Biogeography Theory and Methods. This course serves as the initial course for graduate students in Geography studying biogeography. It aims to familiarize students with contemporary biogeography as it is practiced by geographers. There is considerable emphasis in the class in contemporary biogeographic theory as well as the quantitative methods that are used to formulate and test hypotheses in biogeography. This class has been taught with the new content 4 times since Fall 2002.
MEMORANDUM

TO: Professor Vincent Cassone, Head
   Department of Biology

FROM: Douglas Sherman, Head
       Department of Geography

DATE: October 10, 2007

SUBJECT: GEOG 624: Proposed title and catalogue change

The Department of Geography is proposing to change the course title and catalogue description for GEOG 624: Plant Geography. I have attached the proposed changes for your consideration. Because of your Department’s potential interests in biogeographical themes, I am asking for your endorsement of these changes.

If you have issues or concerns with this proposal, please let me know so that we can discuss any necessary compromises. Thanks for your consideration.

Dept. of Biology has no objections to the proposed name change.

Tom McKnight
Associate Head
Biogeography: Theory & Methods
Geography 624
Fall 2007

Instructor: David Cairns
Office: 706A O&M
Office Hours: TBA.
and by appointment.
Phone: 845-2783
e-mail: cairns@tamu.edu

Course Overview:

This course is designed to introduce students to the theories and practice of biogeography as practiced by geographers. Emphasis will be placed on learning the basics of quantitative vegetation science with the goal of preparing students to begin doing independent biogeographical research. Topics that will be covered include the analysis of vegetation data, ecological ordination and classification techniques, and approaches to the study of landscape ecology. Current issues in biogeography will be addressed through the reading of primary literature.

The course is a lecture course that will be supplemented with laboratory exercises. The laboratory exercises will be primarily computer based and are aimed at introducing students to the analysis of real data. There will be between 4 and 6 for the semester.

Specific topics that will be addressed during the semester are:

- Clustering techniques using multivariate data
- Ordination methods for ecological data including:
  - PCA
  - Nonmetric Multidimensional Scaling
  - Detrended Correspondence Analysis (DCA)
  - Canonical Correspondence Analysis (CCA)
- Classification and Regression Tree (CART)
- Spatial statistics (semivariogram analysis)

Students will use two software packages to perform the statistical analyses, Splus and PC-Ord. Students are not required to use either of these software packages if an alternate one that they have more familiarity with is available. In most cases the assignments will be aimed at familiarizing students with the manipulation of fairly large datasets that lend themselves to automated (or repeatable) analyses. Instruction will be given in how to perform these analyses using Splus.


Additional Readings: Papers will be assigned on an irregular basis. Please see the attached schedule for a partial listing of papers to be read. Students should be prepared to discuss the papers listed on the day they show up on the schedule. Few readings are listed for the last half of the semester. Anticipate that additional readings will be assigned for those days.

Grading:

Grades in the class will be based on two exams (one midterm and a final) and the laboratory exercises. The midterm exam will be worth 30% of the course grade, the final exam worth 40% and the labs worth a total of 30%. It is imperative that you do all of the lab exercises in order to do well in the class. Lab exercises will be due one week after they are assigned and late work will NOT be accepted (except in cases of University excused absences).

Calendar

<table>
<thead>
<tr>
<th>Week 1:</th>
<th>Introduction to Biogeography</th>
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<tbody>
<tr>
<td>Week 2:</td>
<td>Data collection and exploratory analysis (Ch. 1, 2, 3)</td>
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<td>Assignment #1</td>
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<td>Week 3:</td>
<td>Distance measures and Environmental Gradients (Ch. 4, 5, 6)</td>
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<td>Assignment #2</td>
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<td>Week 4:</td>
<td>Vegetation Community Classification (Ch. 10, 11)</td>
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<td>Week 5:</td>
<td>Vegetation Community Classification (Ch. 11, 12)</td>
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<td>Assignment #3</td>
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<td>Week 6:</td>
<td>Group comparison (Ch. 24, 25)</td>
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<td>Assignment #4</td>
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<td>Week 7:</td>
<td>Ordination (Ch 13, Ch 14)</td>
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<td>Week 8:</td>
<td>Ordination</td>
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<td>Mid-term Examination</td>
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<td>Week 9:</td>
<td>Ordination (Ch. 17, 19)</td>
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<td>Week 10:</td>
<td>Ordination (Ch. 19, 20)</td>
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<td>Assignment #5</td>
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<td>Week 11:</td>
<td>Nonlinear Multi-Dimensional Scaling (Ch. 13)</td>
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<td>Assignment #6</td>
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<td>Week 12:</td>
<td>Classification and Regression Trees (Ch. 29)</td>
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<td>Week 13:</td>
<td>Semi-variogram analysis</td>
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<td></td>
<td>Assignment #7</td>
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<tr>
<td>Week 14:</td>
<td>Summary</td>
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**Required Statements:**

**Attendance**

This class will follow the University's policy for excused absences. For more information, please see Section 7 of the student rules: [http://student-rules.tamu.edu](http://student-rules.tamu.edu)

**ADA**

* The American with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room 126 of the Koldus Building. The phone number is 845-1637.

**Copyright and Plagiarism Policy**

* All materials used in this class are copyrighted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless permission is expressly granted.

As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated.

If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, [http://student-rules.tamu.edu](http://student-rules.tamu.edu), under the section "Scholastic Dishonesty."

**Know the Code**

* Aggie Code of Honor: "Aggies do not lie, cheat, or steal, nor do they tolerate those who do." Instances of scholastic dishonesty will be treated in accordance with Section 20 of the TAMU Student Rules. Please inform yourself on the student rules regarding cheating, plagiarism, fabrication of information, conspiracy at the new website: [http://www.tamu.edu/aggiehonor].
Readings for Geography 624:


