APPLICATION FOR NEW COURSE

1. Submitted by the College of Arts and Sciences  Date September 25, 2001
Department/Division offering course  Geography

2. Proposed designation and Bulletin description of this course:
   
   (a) Prefix and Number  GEO 441G
   (b) Title* Fluvial Forms & Processes

   *NOTE: If the title is longer than 24 characters (including spaces), write a sensible title (not exceeding 24 characters) for use in transcripts:
   Fluvial Form & Process

   (c) Lecture/Discussion hours per week  3
   (d) Laboratory hours per week  0
   (e) Studio hours per week  0
   (f) Credits  3

   (g) Course description: An examination of erosion, deposition, and sediment transport processes associated with flowing water, landforms associated with fluvial processes, and landscape evolution in areas dominated by fluvial dissection and deposition. Field trips may be required.

   (h) Prerequisites (if any): GEO 241 or GLY 341

   (i) May be repeated to a maximum of  (not applicable)  (if applicable)

3. To be cross-listed as:  (not applicable)
   Prefix & No.  Signature, Chairman, cross-listing department

4. Effective Date:  (semester and year)  Fall 2002

5. Course to be offered  (a) Fall  (b) Spring  (c) Summer

6. Will the course be offered each year?  (a) Yes  (b) No
   (Explain if not annually): Initial plans are to offer every year. In the future may be rotated with other upper-level physical geography courses in alternate years.

7. Why is this course needed: Fluvial geomorphology is a critical subdiscipline in geography, earth science, and water science. There is no similar course at the University of Kentucky. The course is also seen as a key component of the developing physical geography program.

8. (a) By whom will the course be taught?  Jonathan D. Phillips

   (b) Are facilities for teaching the course now available?  (a) Yes  (b) No
   If not, what plans have been made for providing them?
10. What enrollment may be reasonably anticipated? 12 to 25

11. Will this course serve students in the Department primarily? (a) Yes (b) No
Will it be of service to a significant number of students outside the Department? (a) Yes (b) No
If so, explain:
The course should be of interest to students in geology, civil and agricultural engineering, and other disciplines with interests in water resources and environmental science, including forestry, soil science, and biology.

Will the course serve as a University Studies Program course? (a) Yes (b) No
If yes, under what Area?

12. Check the category most applicable to this course:
   _X__ traditional, offered in corresponding departments elsewhere;
   _____ relatively new, now being widely established
   _____ not yet to be found in many (or any) other universities

13. Is this course part of a proposed new program? (a) Yes (b) No
   If yes, which?

14. Will adding this course change the degree requirements in one or more programs?* (a) Yes (b) No
   If yes, explain the change(s) below:

15. Attach a list of the major teaching objectives of the proposed course, outline and/or reference list to be used. See syllabus attached.

16. If the course is a 100-200 level course, please submit evidence (e.g., correspondence) that the Community College System has been consulted. (Not applicable.)

17. Within the Department, who should be contacted for further information about the proposed course?
   Name/e-mail: Jonathan D. Phillips idp@uky.edu
   Phone Extension: 257-6950

*NOTE: Approval of this course will constitute approval of the program change unless other program modifications are proposed.
APPLICATION FOR NEW COURSE

Signatures of Approval:

*Senate Council

[Signature]

Department Chair

[Signature]

Dean of the College

*If applicable, as provided by the Rules of the University Senate

*Undergraduate Council

[Signature]

Date

*University Studies

[Signature]

Date

*Graduate Council

[Signature]

Date

*Academic Council for the Medical Center

[Signature]

Date

*Senate Council

[Signature]

Date of Notice to Univ. Senate

*Rev 11/98

ACTION OTHER THAN APPROVAL:

Rev 11/98
LEARNING OUTCOMES for GEO 441G Fluvial Forms and Processes

Upon completion of the course, students will:

(1) Have a solid grasp of the basics of hydrology and geomorphology as they relate to the action of flowing water.

(2) Be capable of interpreting fluvial landscapes, landforms, and environments as the outcome of multiple interactions between multiple environmental controls and forces.

(3) Have the ability to analyze fluvial systems to solve practical problems.

(4) Understand the linkages between forms or historical development and process mechanics.
GEO 441G
Fluvial Forms and Processes

Proposed Syllabus and Schedule

Who's the Man?: Dr. Jonathan D. Phillips
Office hours: Tuesdays and Thursdays, 10:50 - 12:00
Monday, 9:00 - 10:30
Telephone: 257-6950
E-mail: jdp@pop.uky.edu

Course Description

This course is an introduction to fluvial geomorphology and to the rivers and fluvial landforms of North America. Geomorphology is the study of earth surface processes and landforms; fluvial refers to flowing water. Therefore we will be studying processes such as the generation of runoff, surface and channel flow, erosion, sediment transport, and deposition. We will also examine the landforms created by rivers, streams, and overland flow.

Roughly the first third of the course will be devoted to mastering the basic concepts and terminology of fluvial geomorphology via traditional classroom lectures, demonstrations, and textbook readings. The latter two-thirds of the course will focus on further explorations of specific topics in fluvial geomorphology via case study presentations, fieldwork, laboratory and in-class exercises, and other hands-on activities.

A research paper is required and is described in a separate handout.

Required Textbook


Grading and Evaluation

Your grade for the course will be based on the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>20%</td>
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<tr>
<td>Test 2</td>
<td>20%</td>
</tr>
<tr>
<td>Exercises and labs</td>
<td>25%</td>
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<tr>
<td>Final examination</td>
<td>15%</td>
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<tr>
<td>Term paper</td>
<td>20%</td>
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</tbody>
</table>

Scores and grades may be curved at the discretion of the professor. Grading will be on a standard 10-point scale.

There is no such thing as a make-up exam. Of course, if you are subject to serious illness, injury, or other documentable factors that physically prevent you from attending an exam, arrangements can be made. Otherwise, do not ask. Forgetfulness, faulty alarm clocks, demands of jobs or other classes, and the like will not be considered. If you want to request a makeup exam, you must provide proper documentation, and notify your instructor as soon as possible.

Other Points and Policies

Honor Code: Wildcat geography students do not lie, cheat, steal, or tolerate those who do. You may be asked or required to sign an honor pledge on tests or other assignments. Academic dishonesty in any form will not be tolerated. This includes failure to acknowledge the source of material and information for term papers and projects. If you have questions about ethics or procedures in this regard, please ask.

Keeping Up: You must attend class faithfully, do the readings according to schedule, and otherwise keep up. The material in this course is cumulative: Understanding later material is contingent on mastery of earlier material. Failure to keep up invariably snowballs into larger problems with are difficult to correct. The professor is not responsible for communicating material to students who miss class, even when the absences are for legitimate reasons.
Attendance: Attendance may not be taken in class. However, the professor reserves the right to institute either positive or negative incentives to increase class attendance, if poor attendance becomes a problem.

Teaching Objectives:
(1) Review basic principles of hydrology and geomorphology as they relate to the action of flowing water.
(2) Train students in basic skills of analysis of surface flows, stream channels, and fluvial and alluvial landforms and sedimentary deposits.
(3) Develop student skills in the interpretation of landscapes and landforms influenced by fluvial processes.
(4) Link forms and historical development with process mechanics.

Course Schedule (subject to modifications as announced in class)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Reading (chapters)</th>
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<tbody>
<tr>
<td>1</td>
<td>Rivers rule!</td>
<td>1</td>
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<tr>
<td>2</td>
<td>Hydrology and runoff</td>
<td>3</td>
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<tr>
<td>3</td>
<td>Drainage networks</td>
<td>2</td>
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<tr>
<td>4</td>
<td>Fluvial process mechanics</td>
<td>4</td>
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<tr>
<td>5</td>
<td>Review and discussion; test 1</td>
<td>5</td>
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<tr>
<td>6</td>
<td>Adjustments of channel form</td>
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<td>7</td>
<td>Alluvial landforms</td>
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<tr>
<td>8</td>
<td>Channel changes through time; test 2</td>
<td>6</td>
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<tr>
<td>9 - 15</td>
<td>Discharge and sediment measurements</td>
<td>various handouts</td>
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<td>Stream power, tractive force, &amp; critical thresholds</td>
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<td></td>
<td>Flow frequency/probability analyses</td>
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<td></td>
<td>Flood and their impacts</td>
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<td>Effects of land use and dams</td>
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<td></td>
<td>Fluvial geomorphology in karst areas</td>
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<tr>
<td></td>
<td>Rivers of Kentucky . . and other stuff</td>
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<tr>
<td>16</td>
<td>Student presentations; term papers due</td>
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<tr>
<td>17</td>
<td>Final exam</td>
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INVESTIGATOR REPORT

INVESTIGATING BODY: Area B, Undated

DATE FOR COUNCIL REVIEW: Nov. 13, 2001

INSTRUCTIONS: This completed form will accompany the course application to the Graduate/Undergraduate Council(s) in order to avoid needless repetition of investigation. The following questions are included as an outline only. Be as specific and as brief as possible. If the investigation was routine, please indicate this. The term "course" is used to indicate one course, a series of courses or a program, whichever is in order. Return the form to Phil Harling, Associate Dean, 231 Patterson Office Tower for forwarding to the Council(s). ATTACH SUPPLEMENT IF NEEDED.

1. List any modifications made in the course proposal as submitted originally and why.

   None.

2. If no modifications were made, review considerations that arose during the investigation and the resolutions.

   All Area B members approved this course w/no issues raised for deliberation.

3. List contacts with program units on the proposal and the considerations discussed therein.

   No contacts were made.

4. Additional information as needed.

5. A&S Curriculum Committee Recommendation:

   APPROVE, APPROVE WITH RESERVATION, OR DISAPPROVE

6. A&S Council Recommendation:

   APPROVE OR DISAPPROVE

7. [Signature]

   A&S Council Investigator

   Date: Nov. 13, 2001

File: InvestigatorRpt