UNIVERSITY OF KENTUCKY

New Course Report

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1. General Information

1a. Submitted by the College of: ARTS &SCIENCES

Date Submitted: 4/27/2015

1b. Department/Division: Geography

1c. Contact Person

Name: Alice Turkington

Email: alicet@uky.edu

Phone: 8592579682

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Semester following approval

1e. Should this course be a UK Core Course? Yes

Inquiry - Nat/Math/Phys Sci

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: GEO 133

2c. Full Title: Science and Policy of Natural Hazards

2d. Transcript Title:

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 3

OTHEREXPLAIN: Includes in-class projects, discussions, student research and presentations.

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: This course examines the science of natural hazards such as hurricanes, earthquakes, landslides and floods, and the causes and effects of the natural hazards. It explores the relationships between the science of, and policy toward, such hazards, discusses their predictability, and examines how scientific knowledge influences policy-making.

2k. Prerequisites, if any: None.

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Fall,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 75

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: No

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: This is a UKCore course, so will be of interest to students throughout the university who need to satisfy this requirement.

8. Check the category most applicable to this course: Relatively New – Now Being Widely Established,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: No

If YES, name the proposed new program:

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached: Yes

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1.How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2.How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3.How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4.Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5.How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6.How do course requirements ensure that students make appropriate use of learning resources?

7.Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8.How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)?

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10.Does the syllabus contain all the required components? NO

11.I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|ACSI222|Anna C Harmon|GEO 133 NEW College Review|20141215

SIGNATURE|REBEAT1|Ruth E Beattie|GEO 133 NEW UKCEC Expert Review|20150427

SIGNATURE|JMETT2|Joanie Ett-Mims|GEO 133 NEW UKCEC Review|20150428

SIGNATURE|JMETT2|Joanie Ett-Mims|GEO 133 NEW Undergrad Council Review|20150506

SIGNATURE|SCHEIN|Richard H Schein|GEO 133 NEW Dept Review|20141110

SIGNATURE|ACSI222|Anna C Harmon|GEO 133 NEW College Review|20141215

SIGNATURE|ACSI222|Anna C Harmon|GEO 133 NEW College Review|20141217

SIGNATURE|SCHEIN|Richard H Schein|GEO 133 ZCOURSE_NEW Approval Returned to Dept|20141217

New Course Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Open in full window to print or save

Generate R

Attachments:

Browse... Upload File

	ID	Attachment
Delete	3981	GEO133NPMCourseReviewForm.docx
Delete	4934	GEO133syllabusdraft.docx

First 1 Last

(*denotes required fields)

1. General Information

a. * Submitted by the College of: ARTS & SCIENCES Submission Date: 4/27/2015

b. * Department/Division: Geography

c.

* Contact Person Name: Alice Turkington Email: alicet@uky.edu Phone: 8592579682

* Responsible Faculty ID (if different from Contact) Email: Phone:

d. * Requested Effective Date: ◉ Semester following approval OR ○ Specific Term/Year [1]

e.

Should this course be a UK Core Course? ◉ Yes ○ No

If YES, check the areas that apply:

☐ Inquiry - Arts & Creativity	☐ Composition & Communications - II
☐ Inquiry - Humanities	☐ Quantitative Foundations
☑ Inquiry - Nat/Math/Phys Sci	☐ Statistical Inferential Reasoning
☐ Inquiry - Social Sciences	☐ U.S. Citizenship, Community, Diversity
☐ Composition & Communications - I	☐ Global Dynamics

2. Designation and Description of Proposed Course.

a. * Will this course also be offered through Distance Learning? ○ Yes [4] ◉ No

b. * Prefix and Number: GEO 133

c. * Full Title: Science and Policy of Natural Hazards

d. Transcript Title (if full title is more than 40 characters):

e. To be Cross-Listed [2] with (Prefix and Number):

f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours[3] for each meeting pattern type.

3	Lecture		Laboratory[1]		Recitation		Discussion
	Indep. Study		Clinical		Colloquium		Practicum
	Research		Residency		Seminar		Studio
	Other	If Other, Please explain:		Includes in-class projects, discussions, student research and presenta			

g. * Identify a grading system:

◉ Letter (A, B, C, etc.)
○ Pass/Fail
○ Medicine Numeric Grade (Non-medical students will receive a letter grade)
○ Graduate School Grade Scale

h. * Number of credits: 3

i. * Is this course repeatable for additional credit? ○ Yes ◉ No

If YES: Maximum number of credit hours:

If YES: Will this course allow multiple registrations during the same semester? ○ Yes ○ No

j. * Course Description for Bulletin:

This course examines the science of natural hazards such as hurricanes, earthquakes, landslides and floods, and the causes and effects of the natural hazards. It explores the relationships between the science of, and policy toward, such hazards, discusses their predictability, and examines how scientific knowledge influences policy-making.

k. Prerequisites, if any:

None.

l. Supplementary teaching component, if any: ○ Community-Based Experience ○ Service Learning ○ Both

3. *** Will this course be taught off campus?** ○ Yes ◉ No

If YES, enter the off campus address:

4. **Frequency of Course Offering.**

a. * Course will be offered (check all that apply): ☑ Fall ☐ Spring ☐ Summer ☐ Winter

b. * Will the course be offered every year? ◉ Yes ○ No

If No, explain:

5. *** Are facilities and personnel necessary for the proposed new course available?** ◉ Yes ○ No

If No, explain:

6. *** What enrollment (per section per semester) may reasonably be expected?** 75

7. **Anticipated Student Demand.**

a. * Will this course serve students primarily within the degree program? ○ Yes ◉ No

b. * Will it be of interest to a significant number of students outside the degree pgm? ◉ Yes ○ No

If YES, explain:

This is a UKCore course, so will be of interest to students throughout the university who need to satisfy this requirement.

8. *** Check the category most applicable to this course:**

☐ Traditional – Offered in Corresponding Departments at Universities Elsewhere
☑ Relatively New – Now Being Widely Established
☐ Not Yet Found in Many (or Any) Other Universities

9. **Course Relationship to Program(s).**

a. * Is this course part of a proposed new program? ○ Yes ◉ No

If YES, name the proposed new program:

b. * Will this course be a new requirement [5] for ANY program? ○ Yes ◉ No

If YES [5], list affected programs::

10. **Information to be Placed on Syllabus.**

a. * Is the course 400G or 500? ○ Yes ◉ No
If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in **10.b**. You must include: (i) identi additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b. ☑ * The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if appl **10.a** above) are attached.

[4] Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
[5] The chair of the cross-listing department must sign off on the Signature Routing Log.

[11] In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, re
two hours per week for a semester for one credit hour. (from SR 5.2.1)
[12] You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
[13] In order to change a program, a program change form must also be submitted.

Rev 8/09

Course Review Form
Inquiry in the Natural/Mathematical/Physical Sciences

Reviewer Recommendation
Accept ☐ Revisions Needed ☐

Course: GEO 133 Science and Policy of Natural Hazards

Using the course syllabus as a reference, identify when and how the following learning outcomes are addressed in the course. Since learning outcomes will likely be addressed multiple ways within the same syllabus, please identify a representative example (or examples) for each outcome.

☒ Course activities that enable students to demonstrate an understanding of methods of inquiry that lead to scientific knowledge and distinguish scientific fact from pseudoscience.

Example(s) from syllabus:
Assignment example #4

Brief Description:
Plot the monthly values of CO2 levels recorded at Mauna Loa for the past 5 years. What has been the annual rate of increase? Given the data on isotopic signatures of the atmospheric carbon, what has been the source of this carbon? This should enable students to use the data available to answer controversial questions, such as "is climate change really caused by humans"?

☒ Course activities that enable students to demonstrate an understanding of the fundamental principles in a branch of science.

Example(s) from syllabus:
Aasignment # 3

Brief Description:
Using Google Earth, identify the floodplain features labeled in the images in the kmz. files. What are the risks of flooding associated with each of the 4 locations listed? This analysis of geomorphic features in the landscape uses basic tools in fluvial geomorphology to understand flood risk.

☒ Course activities that enable students to demonstrate the application of fundamental principles to interpret and make predictions in that branch of science.

Example(s) from syllabus:
Assignment #2

Brief Description:
Using maps and data from the NOAA Hurricane Center, calculate the rate of landfalls (per year) of hurricanes and tropical storms in the US over the past 5 and 10 years. What is the likelihood that a storm will make landfall? How has this changed from data from the 1980s? Why are the figures so variable? This work allows students to use data produced by NOAA to attempt to calcualte recurrence intervals, and compare these to longer term recurrence interval values. It also highlights the inherent variability in storm tracks.

☒ Course activities that enable students to demonstrate their ability to discuss how at least one scientific discovery changed the way scientists understand the world.

Example(s) from syllabus:

Module #4

Brief Description:
The 4th module dealing with earthquakes will use the example of plate tectonics to demonstrate how this sceintific discovery, and subsequent acceptance in the scientific community, changed the perspective of geologists.

☒ Course activities that enable students to demonstrate their ability to discuss the interaction of science with society.

Example(s) from syllabus:
Term project

Brief Description:
For this project, provide a comprehensive assessment of a natural hazard, its frequency and predictability, and the policies in place at the particular place. Include a description of the geologic/geomorphic/atmospheric processes, and discuss how they are affected by socio-economic, cultural and political conditions. Critically review the local and state policies in place to mitigate risks posed by the hazard in question, and policies to alleviate their impact on people and infrastructure, including the adequacy of their communication to relevant communities. Make recommendations about any measures that should be implemented.

☒ A hands-on student project is required. This project enables students to demonstrate their ability to conduct a scientific project using scientific methods that include design, data collection, analysis, summary of the results, conclusions, alternative approaches, and future studies. Describe the required student product (paper/ laboratory report) based on the hands-on project.
For this project, provide a comprehensive assessment of a natural hazard, its frequency and predictability, and the policies in place at the particular place. Include a description of the geologic/geomorphic/atmospheric processes, and discuss how they are affected by socio-economic, cultural and political conditions. Critically review the local and state policies in place to mitigate risks posed by the hazard in question, and policies to alleviate their impact on people and infrastructure, including the adequacy of their communication to relevant communities. Make recommendations about any measures that should be implemented.

☒ Course activities that demonstrate the integration of information literacy into the course.

Example(s) from syllabus:
Term project and Modules #1-4

Brief Description:
For this project, provide a comprehensive assessment of a natural hazard, its frequency and predictability, and the policies in place at the particular place. Include a description of the geologic/geomorphic/atmospheric processes, and discuss how they are affected by socio-economic, cultural and political conditions. Critically review the local and state policies in place to mitigate risks posed by the hazard in question, and policies to alleviate their impact on people and infrastructure, including the adequacy of their communication to relevant communities. Make recommendations about any measures that should be implemented.

Reviewer's Comments

GEO 133 Science and Policy of Natural Hazards

Instructor:	Dr. A. Turkington
Office Address:	873 POT
Email:	alicet@uky.edu
Office Phone:	257-9682
Office Hours:	Monday and Wednesday TBA
Co-Instructor:	TBA
Office Address:	TBA
Email:	TBA
Office Phone:	TBA
Office Hours:	TBA

Course Description:
This course examines the science of natural hazards such as hurricanes, earthquakes, landslides and floods, and the causes and effects of the natural hazards. It explores the relationships between the science of, and policy toward, such hazards, discusses their predictability, and examines how scientific knowledge influences policy-making.

Student Learning Outcomes:
After completing this course, the student will be able to:

1. Understand the phenomenology and forecasting of selected natural hazards.
2. Describe examples of hazard risk assessment, mitigation and adaptation.
3. Critically evaluate public policy in response to natural hazards, including insurance regulations, building codes and planning, evacuation procedures and reconstruction efforts.
4. Communicate scientific information effectively to policy makers.

Required Materials:
For example: Keller/DeVecchio (2014) Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes (4e) and B. K. Paul (2011) Environmetal Hazards and Disasters: contexts, perspectives and management. Wiley-Blackwell.

Description of Course Activities
This course is designed as a hybrid course, in which all of the reading materials and assignments are available online. Students are expected to complete readings and/or video documentaries on schedule, and complete quizzes, homework assignments and tests online by the assigned deadlines. The class will meet twice during the week, during which time students will review material covered online and complete a project in class, aided by the instructors. Online assignments typically use Google Earth, video recordings

and animations; in-class projects typically use web sites such as USGS Earthquake Information Center, NASA Climate Change, or NOAA Pacific Tsunami Warning Center. The course schedule is available on the course web site, and missed work can only be made up in the event of a university-approved absence, if the instructor is notified within one week of the absence. Students will complete a final project that demonstrates their understanding of a specific hazard at a particular location, and demonstrates their skill in communicating scientific information.

Course Schedule

Weeks 1-3: Hurricanes
Weeks 4-7: Tornadoes and severe weather
Weeks 8-11: Flooding and subsidence
Weeks 12-14: Earthquakes and mass wasting
Weeks 15-16: Term project

Course grading.

This course is based on a series of assignments and quizzes each week, with a final project due on December 11th. Your grade in this class will be based on your cumulative grade, including all work assigned. Grades will be calculated as follows: A>90%; B>80%; C>70%; D>60%.
Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (http://www.uky.edu/Registrar/AcademicCalendar.htm)

Success in this course

This class is designed to allow you to work independently, to study the fundamental concepts in advance of class meetings and to use time in class to discuss ideas, concepts and complete assignments. The in-class assignments are designed to promote critical thinking and problem solving, and many will reinforce the concepts being introduced that week. Tests will typically be administered on Fridays; these will test your understanding of the material covered that week. Good standing in the class is crucial for success, as material builds on earlier concepts, and grades are cumulative. Missing work will be detrimental to your grade. You are responsible for keeping abreast of assignments and/or quizzes due, reading that must be completed, and class meetings.

Attendance Policy

If a student misses a quiz, assignment or test date without properly excused absence (see UK Student Code Part II section 5.2.4.2) no credit will be given for the missed work. Similarly, assignments handed in after a due date without reasonable cause will not be accepted. There are no make-up quizzes or exercises, except for university-approved excuses. Where possible, provide one week's prior notice to allow for possible flexibility in rescheduling course work. If advance notice is not possible then documentation of the absence must be provided to the instructor within one week after the absence. Make-up of

missed assignments, class activities, or exams will be scheduled on a case-by-case basis.

Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request "appropriate verification" when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Integrity

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: http://www.uky.edu/Ombud. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online http://www.uky.edu/StudentAffairs/Code/part2.html) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought,

research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability
If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Classroom Decorum
Please be courteous to your classmates and instructors by arriving punctually, and do not leave before the class is finished, unless you have gained approval beforehand. Please take personal responsibility to ensure that all academic discourse occurs in a context characterized by respect and civility. Obviously, the accepted level of civility would not include attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, national/regional origin, etc. Ensure that your cell phones, iPods, alarms, and other electronic devices are switched OFF. Of course, I accept the use of laptop computers and tablets for note-taking and class work,

but not for any other use in the classroom. Please do not eat and drink in the classroom and keep all disruption to a minimum.

APPENDIX

Other topics for future semesters:

1. Coastal hazards: erosion, storm surge, tsunamis.
2. Volcanic activity
3. Wildfires
4. Climate change
5. Soil degradation

Term Project

The term project has two purposes:

1. To demonstrate that students understand a natural hazard, and can use that information to evaluate policies for handling emergencies.
2. To demonstrate skill in communicating scientific information

For this project, provide a comprehensive assessment of a natural hazard, its frequency and predictability, and the policies in place at the particular place. Include a description of the geologic/geomorphic/atmospheric processes, and discuss how they are affected by socio-economic, cultural and political conditions. Critically review the local and state policies in place to mitigate risks posed by the hazard in question, and policies to alleviate their impact on people and infrastructure, including the adequacy of their communication to relevant communities. Make recommendations about any measures that should be implemented.

Locations/Hazards:
Oklahoma City – tornadoes, hail storms, floods.
Minneapolis – floods, tornadoes
Memphis – floods, earthquakes, tornadoes
Los Angeles – earthquakes, tsunamis, wildfires, floods
Miami – hurricanes, tornadoes
San Francisco – earthquakes, wildfires, tsunamis
St. Louis – tornadoes, earthquakes, floods
Seattle – earthquakes, tsunamis, volcanoes, wildfires

Examples of assignments

1. Write a one page summary to the major of Los Angeles, who has allocated one half of his emergency preparedness budget to earthquake prediction and one half to tornado prediction, explaining why this should be amended.

Explain your amendments in terms of the impact, predictability and frequency of occurrence of the hazards.

2. Using maps and data from the NOAA Hurricane Center, calculate the rate of landfalls (per year) of hurricanes and tropical storms in the US over the past 5 and 10 years. What is the likelihood that a storm will make landfall? How has this changed from data from the 1980s? Why are the figures so variable?

3. Using Google Earth, identify the floodplain features labeled in the images in the kmz. files. What are the risks of flooding associated with each of the 4 locations listed? How have the risks been addressed through (a) infrastructure, (b) policy?

4. Plot the monthly values of CO_2 levels recorded at Mauna Loa for the past 5 years. What has been the annual rate of increase? Given the data on isotopic signatures of the atmospheric carbon, what has been the source of this carbon?