

Colonnade Program Course Proposal: Connections Category

Please complete the following and return electronically to colonnadeplan@wku.edu.

1. What course does the department plan to offer in *Connections*? Which subcategory are you proposing for this course? (Social and Cultural, **Local to Global**, Systems)

The Department of Geography and Geology plans to offer GEOG 216, *Geotechnologies in a Global Community*, in the **Local to Global** subcategory.

2. How will this course meet the specific learning objectives of the appropriate subcategory? Please address **all** of the learning outcomes listed for the appropriate subcategory.

1. **Analyze** issues on local and global scales.

This course will address the significance of local and global phenomena including such topics as cultural diversity, economic disparities, social issues, infrastructure, energy, migration, crime, climate, karst, and environmental challenges, using geospatial tool for analysis.

Today, “of-the-earth” technologies, such as GPS units, smart phone mapping applications, and 3D desktop map viewers, are available to many people and in a wide range of locations. Geography 216 will teach basic skills of analysis using these types of geotechnologies such as Google Earth, ArcGIS for Desktop, ArcGIS online, and other free to professional grade mapping platforms, which, in turn, will provide students with a unique tool set with which they can use to interpret and understand local and global geographic issues. Since the focus is on available software and geospatial data to the general public, it will be possible for students to continue using these analytical tools in other classes, their careers, and in the lives as members of their communities and as global citizens.

- **Example activity:** Students will use data from the Federal Bureau of Investigation (FBI) to ***analyze*** basic variability of crime reports. They will understand that crime statistics have spatial and temporal variability at the local and national level. A second activity will compare and contrast similar statistics at the national (e.g., U.S.), regional (e.g., Caribbean) and global scale.

2. **Examine** the local and global interrelationships of one or more issues.

The general topics (listed above) can have a direct relationship at the local and global scale, or can function independently based on analysis. For example, energy prices have variability at the local and global scales based on access, politics and other issues related to supply and demand. The examination of these

direct connections can help the student understand the dynamic interrelationships that systems possess.

- **Example activity:** One local issue that garners frequent attention in the media is the seemingly uniformity of gas prices in the city of Bowling Green. Students will explore real-time data associated with gasoline prices using a variety of websites that sort price based on city, state or zip code. The data will be transferred to a map showing local (city), regional (zip code, state), and national variation. The resultant spatial data will be used to *examine* a variety of economic, political, and environmental issues associated with gasoline prices. Students will increase their understanding of the interrelationships of supply and demand, state tax rates, pollution, population size, and location of oil refineries, and perhaps answer the perennial question of alleged gas price-fixing in Bowling Green.

3. **Evaluate** the consequences of decision-making on local and global scales.

Visualization of content data can help a student apply the skills gained in this class for their research demands of their major. Understanding the spatial variability of current topics can create an opportunity for the student to develop a clearer understanding of topics that they will face as local citizens in a global community. Demonstrating and comprehending the affects and loss of information by aggregating data into larger spatial units (i.e., the modifiable area unit problem) and understanding how relationships don't hold true for smaller spatial units from aggregated data (i.e., ecological fallacy) will be investigated. Students will also examine how decisions are made based on the different spatial scales, temporal scales, and purposes of the different kinds of geospatial data that are readily available for spatial analysis, such as data from the Kentucky Geography Network (or Kentucky's Geoportal).

- **Example activity:** Students will identify and map local karst features of the United States in a spatial database (GIS) in order to *evaluate* basic risk. They will integrate morbidity rates associated with cancer at the county and state levels in the United States. The resultant map will reveal "hotspots" associated with Radon, a carcinogen that occurs in karst landscapes. The resultant "hotspots" will have local, regional and national variability based on the spatial data that they developed. Students will then identify karst regions in other parts of the world to identify "hotspots" beyond the U.S. A point of discussion would be to determine if all "hotspot" areas have remediation plans in place and if not, what are some of the potential consequences to public health.

3. In addition to meeting the posted learning outcomes, how does this course contribute uniquely to the *Connections* category (i.e., why should this course be in Colonnade)? Discuss in detail.

Globalization challenges the world citizen to develop skills to compete in interconnected societies. Understanding the interrelationships between social and physical environments at the local and global scales is vital in today's more competitive, interconnected world. Understanding spatial data and how it relates to a student's academic interest is the connection that will be made in this course. Our students need to continue to be competitive in today's increasingly interconnected world. This course will specifically provide an opportunity to use cutting-edge technology that can be applied at the local and global scales in all disciplines at WKU.

4. Please identify any prerequisites for this course. NOTE: Any prerequisites **MUST** be *Colonnade Foundations* or *Explorations* courses.

None.

5. Syllabus statement of learning outcomes for the course. NOTE: In multi-section courses, the same statement of learning outcomes must appear on every section's syllabus.

We expect that students taking GEOG 216 will benefit from exposure to a variety of technologies for quantitative analysis and improve their analytical skills (both written and oral) through qualitative interpretation. Students who successfully complete this course will:

1. Become proficient on presented mapping software.
 2. Develop analytical skills through project-based activities to understand variability of data at the local and global scale.
 3. Examine interrelationships of spatial data at the local and global scale.
 4. Apply their academic interest to the content presented in this class.
 5. Develop and evaluate spatial data of their academic interest.
 6. Illustrate the variability of local and global data in a project-based activity.
6. Give a brief description of how the department will assess the course beyond student grades for these learning objectives. Each of the learning objectives outlined in step 2 above will be assessed separately using the same instrument (see below):

1. **Analyze**

Each semester, students in each section of GEOG 216 will be given a pre-test at the beginning of the semester that includes questions centered on the general topics addressed in this course. The pre-test will focus on social and physical environments and their relationship at the local and global scale. The exam will include multiple choice questions on basic content areas such as cultural diversity, economic disparities, social issues, infrastructure, energy, migration, crime, climate, karst, and environmental challenges, using geospatial tools for **analysis**.

Part of the midterm examination will include the questions from the pre-test assessment exam. The selected pre-test questions on the midterm will be examined to see if learning expectations have been met. An average score of 70% is required for this section of the midterm to meet basic learning expectations for this course.

The results of the pretest will be shared with all of the GEOG 216 instructors, the department head, and other department members for further analysis. From these analyses, it will be determined if any changes should be made to our teaching methods or course content to meet the expected learning outcomes for the course.

2. Examine

Each semester during the midterm examination, all students in GEOG 216 will be tested over material that has been covered during the first half of the semester. In addition to that content, a specific section of the exam will be dedicated to a non-graded pretest that addresses how geospatial tools are used to **examine** the local and global interrelationships. These interrelationships could include issues like cultural diversity, economic disparities, social issues, infrastructure, energy, migration, crime, climate, karst, and environmental challenges. This ungraded portion of the midterm will consist of multiple choice questions.

The results of pre-test portion of the midterm exam will be shared with all of the GEOG 216 instructors, the department head, and other department members for further analysis. From these analyses, it will be determined if any changes should be made to our teaching methods or course content to meet the expected learning outcomes for the course.

3. Evaluate

Each semester, students in each section of GEOG 216 will be given a pre-test at the beginning and midway through the semester to analyze and examine general topics to see how geospatial tools are used to visualize data. During the final examination, all students in Geog. 216 will be tested over material that has been covered during the semester. The exam will assess the GEOG 216 student's ability to analyze, examine and **evaluate** spatial data. The content of the test will focus on the students understanding of spatial variability of current topics and their ability to understand how aggregated data can help them make better decisions as a local citizen in a global community.

Specific questions from the pretest and midterm will be administered in each section of GEOG 216. A random sample of 25% of these exams will be selected and graded independently of the final exam. A passing grade of 70% is required to meet basic learning expectations for this course.

The results will be shared with all of the GEOG 216 instructors, the department head, and other department members for further analysis. From these analyses, it

will be determined if any changes should be made to our teaching methods or course content to meet the expected learning outcomes for the course.

7. Please discuss how this course will provide a summative learning experience for students in the development of skills in argumentation and use of evidence.

The summative learning experience for this class will be based in the form of a project presentation. The presentation will be centered on the selected geotechnologies presented during the semester. The project will demonstrate the students ability to compile and analyze spatial data at various map scales (i.e., local and global) and projections (e.g., true shape and true size). They will be able to communicate collected evidence and demonstrate how the methodology developed through the project. In addition, the student will be able visualize and communicate the variability of their project's spatial data at multiple scales.

8. How many sections of this course will your department offer each semester?

We plan on offering one section of GEOG 216 each semester, with additional sections added as demand dictates.

9. Please attach sample syllabus for the course. PLEASE BE SURE THE PROPOSAL FORM AND THE SYLLABUS ARE IN THE SAME DOCUMENT.

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GEOG 216: Geotechnologies in a Global Community

scott.dobler@wku.edu 363 EST

Office hours:

M/W: 7:30 – 8am IEB 301 and 10:15-11am EST 363

T/TH: 9:00-9:30am IEB 301

Available on request

Course Description

This course has been designed to show students how to integrate spatial data into discipline-specific issues. The development of map-based data will allow the student to address challenging issues that they will face as a global citizen. Students will learn to analyze, and evaluate cultural contexts, examine the variability of issues on a local and global scale. They will also understand and apply system-level approaches to the stewardship of our social and physical environments.

Course Objectives

After completing this course, a student should be able to:

1. Become proficient on presented mapping software.
2. Develop analytical skills through project-based activities to understand variability of data at the local and global scale
3. Examine interrelationships of spatial data at the local and global scale
4. Apply their academic interest to the content presented in this class
5. Develop and evaluate spatial data of their academic interest
6. Illustrate the variability of local and global data in a project-based activity

Test Information

Your grades will be posted on blackboard. To reach the site go to the site listed above, under student tools, you can click on “Check Your Grade”. You must calculate how many points you have received and divide it by how many points that I have made you accountable for.

Your total points / points available = Final Percent = Final Letter Grade

Many assigned Tutorials and Review Questions 90%+=A

10 activities 80-89%=B

3 lab exercises 70-79%=C

2 exams 60-69%=D

1 project <60%=F

5 in-class unannounced quizzes

In-class quiz/material cannot be made up

Materials needed

Text: (Required):

Monmonier, Mark. 1996. [How to Lie with Maps](#) University of Chicago Press

Other Requirements

- External powered hard drives do not work well, thumb drives to back up your homework and activities. Do not save information to your webmail! Use MyFiles in blackboard and P: drive

- You must have access to a computer with a reliable internet connection. The WKU student labs meet this requirement.

Blackboard

The blackboard site will be used to support the class. Your grades will be published along with additional information on this site. You will have activities and quizzes to deal with on this site as well.

Attendance Policy

Do not miss any classes! You will pay dearly for missing any content from class, and it is not my job to repeat the content to you in my office. Poor attendance reflects a poor scholastic attitude. Excessive absences (5 or more) will result in a failing grade. Four absences will drop your grade by one letter. I will have assigned seats, and a sign in sheet will be passed around for your signature. You do not need to bring me an excuse, but if you are so sick that you miss five classes, you have bigger worries than this class. If you are participating in a university sanctioned event, please bring me a **copy** of your excuse. Please do not ask me to calculate your absences for you. Role will be taken at the beginning of the class. If you miss role call, you will be marked absent for the day.

Drop Policy

Departmental Drop Policy: The Department of Geography and Geology strictly adheres to the course drop policy found in the Undergraduate and Graduate Catalogs. It is the sole responsibility of individual students to meet the cited deadlines for dropping a course. In exceptional cases, the deadline for schedule changes (dropping a course) may be waived. The successful waiver will require written description of extenuating circumstances and relevant documentation. Poor academic performance, general malaise, or undocumented general malaise, or undocumented general stress factors are not considered as legitimate extenuating circumstances. Since granting of waivers is rare, I urge you to follow the established guidelines.

Field trips

Field trips are an important part of any geography class. We will take them, and they will be announced during the course of the semester. Most will be walking field trips, but some can require transportation to and from the site. Orchestration of these events will be dealt with as they arise.

Students with Disabilities

In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Office for Student Disability Services in Downing University Center, A-200. The phone number is 270 745 5004. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

Academic Honesty

Each student should be aware of the student code of conduct found in WKU's student handbook. Examples of academic dishonesty include cheating on an exam, allowing another student to copy your work, either inside or outside of class; using work from previous semesters; and plagiarism.

Caught cheating in this course will result in failing the course and possible removal from the University.

Schedule Change Policy

The Department of Geography and Geology strictly adheres to University policies, procedures and deadlines regarding student schedule changes. It is the sole responsibility of the students to meet all deadlines in regard to adding, dropping, or changing the status of a course. Only in exceptional cases will a deadline be waived. The student schedule exception appeal form shall be used to initiate all waivers. This form requires a written attachment of appropriate documentation. Poor academic performance, general malaise, or undocumented general stress factors are not considered as legitimate circumstances.