Cover Sheet: Request 15746

GIS 2XXX – The World and Big Data

Info

Process	Course|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Jane Southworth jsouthwo@ufl.edu
Created	1/28/2021 5:32:30 PM
Updated	3/11/2021 1:26:39 PM
Description of request	A new 2000 level introductory course in Geographic Big Data and the Geographical uses and applications

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Geography 16220000	Jane Southworth		1/28/2021
No document changes					
College	Conditionall Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane	The College Curriculum Committee conditionally approves this request, with the following needed: • Telegraph course description. • Revise course objectives. Understand, grasp, be aware of are not observable/measurable. • Remove A+ and replace F with E. • Add a 15th week. For guidance on course descriptions, please see https://gov.clas.ufl.edu/files/Cor Problems-Checklist.pdf	2/25/2021
No document changes					
Department	Approved	CLAS - Geography 16220000	Jane Southworth		3/8/2021
No document changes					
College	Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane		3/11/2021
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			3/11/2021
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					

Step	Status	Group	User	Comment	Updated
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 15746

Info

Request: GIS 2XXX – The World and Big Data
Description of request: A new 2000 level introductory course in Geographic Big Data and the Geographical uses and applications
Submitter: Jane Southworth jsouthwo@ufl.edu
Created: 3/8/2021 2:22:30 PM
Form version: 4

Responses

Recommended Prefix
Enter the three letter code indicating placement of course within the discipline (e.g., POS, ATR, ENC). Note that for new course proposals, the State Common Numbering System (SCNS) may assign a different prefix.

    Response:
    GIS

Course Level
Select the one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

    Response:
    2

Course Number
Enter the three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles. For new course requests, this may be XXX until SCNS assigns an appropriate number.

    Response:
    XXX

Category of Instruction
Indicate whether the course is introductory, intermediate or advanced. Introductory courses are those that require no prerequisites and are general in nature. Intermediate courses require some prior preparation in a related area. Advanced courses require specific competencies or knowledge relevant to the topic prior to enrollment.

    Response:
    Introductory

• 1000 level = Introductory undergraduate
• 2000 level = Introductory undergraduate
• 3000 level = Intermediate undergraduate
• 4000 level = Advanced undergraduate
• 5000 level = Introductory graduate
• 6000 level = Intermediate graduate
• 7000 level = Advanced graduate
• 4000/5000= Joint undergraduate/graduate
• 4000/6000= Joint undergraduate/graduate

*Joint undergraduate/graduate courses must be approved by the UCC and the Graduate Council)

Lab Code
Enter the lab code to indicate whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

    Response:
    None

Course Title
*Enter the title of the course as it should appear in the Academic Catalog. There is a 100 character limit for course titles. *

    Response:
    The World & Big Data

Transcript Title
Enter the title that will appear in the transcript and the schedule of courses. Note that this must be limited to 30 characters (including spaces and punctuation).

    Response:
    The World & Big Data

Degree Type
Select the type of degree program for which this course is intended.

    Response:
    Baccalaureate

Delivery Method(s)
Indicate all platforms through which the course is currently planned to be delivered.

    Response:
    On-Campus

Co-Listing
Will this course be jointly taught to undergraduate, graduate, and/or professional students?

    Response:
    No

Effective Term
Select the requested term that the course will first be offered. Selecting "Earliest" will allow the course to be active in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's best projection. Courses cannot be implemented retroactively, and therefore the actual effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires 2 to 6 weeks after approval of the course at UF.

Response:
Earliest Available

Effective Year
Select the requested year that the course will first be offered. See preceding item for further information.

Response:
Earliest Available

Rotating Topic?
Select "Yes" if the course can have rotating (varying) topics. These course titles can vary by topic in the Schedule of Courses.

Response:
No

Repeatable Credit?
Select "Yes" if the course may be repeated for credit. If the course will also have rotating topics, be sure to indicate this in the question above.

Response:
No

Amount of Credit
Select the number of credits awarded to the student upon successful completion, or select "Variable" if the course will be offered with variable credit and then indicate the minimum and maximum credits per section. Note that credit hours are regulated by Rule 6A-10.033, FAC. If you select "Variable" for the amount of credit, additional fields will appear in which to indicate the minimum and maximum number of total credits.

Response:
3

S/U Only?
Select "Yes" if all students should be graded as S/U in the course. Note that each course must be entered into the UF curriculum inventory as either letter-graded or S/U. A course may not have both options. However, letter-graded courses allow students to take the course S/U with instructor permission.

Response:
No

Contact Type
Select the best option to describe course contact type. This selection determines whether base hours or headcount hours will be used to determine the total contact hours per credit hour. Note that the headcount hour options are for courses that involve contact between the student and the professor on an individual basis.

Response:

Regularly Scheduled

• *Regularly Scheduled [base hr]*
• *Thesis/Dissertation Supervision [1.0 headcount hr]*
• *Directed Individual Studies [0.5 headcount hr]*
• *Supervision of Student Interns [0.8 headcount hr]*
• *Supervision of Teaching/Research [0.5 headcount hr]*
• *Supervision of Cooperative Education [0.8 headcount hr]*

Contact the Office of Institutional Planning and Research (352-392-0456) with questions regarding contact type.

Weekly Contact Hours
Indicate the number of hours instructors will have contact with students each week on average throughout the duration of the course.

Response:
3

Course Description
Provide a brief narrative description of the course content. This description will be published in the Academic Catalog and is limited to 500 characters or less. See course description guidelines.

Response:
Today's world is driven by data and over 80% of that data is geographic. Increasing volume and varying formats of these geospatial big datasets have posed new challenges. Introduces relevant concepts (e.g., 5 V's) and techniques (e.g., cloud computing) of big (spatial) data as well as its applications in the real world. Hands-on experiences with Volunteered Geographic Information (VGI), analyzing "geotagged" Tweets, and visualizing spatial datasets.

Prerequisites
Indicate all requirements that must be satisfied prior to enrollment in the course. Prerequisites will be automatically checked for each student attempting to register for the course. The prerequisite will be published in the Academic Catalog and must be formulated so that it can be enforced in the registration system. Please note that upper division courses (i.e., intermediate or advanced level of instruction) must have proper prerequisites to target the appropriate audience for the course.
Courses level 3000 and above must have a prerequisite.
Please verify that any prerequisite courses listed are active courses.

Response:
None

Completing Prerequisites on UCC forms:

• *Use "&" and "or" to conjoin multiple requirements; do not used commas, semicolons, etc.*
• *Use parentheses to specify groupings in multiple requirements.*
• *Specifying a course prerequisite (without specifying a grade) assumes the required passing grade is D-. In order to specify a different grade, include the grade in parentheses immediately after the course number. For example, "MAC 2311(B)" indicates that students are required to obtain a grade of B in Calculus I. MAC2311 by itself would only require a grade of D-.*
• *Specify all majors or minors included (if all majors in a college are acceptable the college code is sufficient).*
• *"Permission of department" is always an option so it should not be included in any prerequisite or co-requisite.*
• *If the course prerequisite should list a specific major and/or minor, please provide the plan code for that major/minor (e.g., undergraduate Chemistry major = CHY_BS, undergraduate Disabilities in Society minor = DIS_UMN)*

Example: A grade of C in HSC 3502, passing grades in HSC 3057 or HSC 4558, and undergraduate PBH student

should be written as follows: HSC 3502(C) & (HSC 3057 or HSC 4558) & UGPBH
* *

Co-requisites
Indicate all requirements that must be taken concurrently with the course. Co-requisites are not checked by the registration system. If there are none please enter N/A.

Response:
N/A

Rationale and Placement in Curriculum
Explain the rationale for offering the course and its place in the curriculum.

Response:
The course introduces a very important topic of big data in geographic form, which students will be addressing throughout much of their later coursework in geography. This will be the entry-level course and will be introductory in nature, with many different examples of real world examples e.g. natural disasters, smart cities, health networks, business geography etc. This course will introduce relevant concepts (e.g., 5 V's) and techniques(e.g., cloud computing) of big (spatial) data. The students will also have hands-on experiences such as contributing Volunteered Geographic Information (VGI, e.g., creating and uploading geographic information to Open Street Map), retrieving social media data associated with location (e.g., "geo-tagged" Tweets), operating relational database management system (RDMS) and NoSQL databases, and visualizing big spatial datasets. It will provide a nice introduction to many 3000/4000 level courses in Geography

Course Objectives
Describe the core knowledge and skills that student should derive from the course. The objectives should be both observable and measurable.

Response:
Learning objectives
After completing this course, the students are expected to:
? Identify the unique characteristics of big data
? Describe the techniques used for collecting, storing, managing, processing, analyzing, and visualizing big data
? Illustrate how big data can solve real-world problems
? Analyze basic skills to contribute, retrieve, and visualize big spatial datasets
? Defend issues in using big spatial data

Course Textbook(s) and/or Other Assigned Reading
*Enter the title, author(s) and publication date of textbooks and/or readings that will be assigned. Please provide specific examples to evaluate the course and identify required textbooks. *

Response:
Textbooks
1. Thatcher J, Eckert J, and Shears A (Eds.). Thinking big data in geography: new regimes, new research. University of Nebraska Press, 2018.
2. V. Mayer-Schönberger and K. Cukier. Big data: a revolution that will transform how we live, work, and think. Eamon Dolan/Mariner Books, 2014.
3. Foster I, Ghani R, Jarmin RS, Kreuter F, and Lane J (Eds.). Big data and social science: A practical guide to methods and tools. CRC Press, 2017.

Weekly Schedule of Topics
Provide a projected weekly schedule of topics. This should have sufficient detail to evaluate how the course would meet current curricular needs and the extent to which it overlaps with existing courses at UF.

    Response:
    Week 1: Introduction to the course
    Week 2: What is big (spatial) data?
    Week 3: The 5 V's of big data
    Week 4: Spatial data types
    Week 5: Sources of big spatial data
    Week 6: Retrieving Geotagged Social media data
    Week 7: Big Spatial Data Quality I
    Week 8: Big Spatial Data Quality II
    Week 9: Big spatial data management and storage
    Week 10: Visualizing Big Spatial Data
    Week 11: Artificial Intelligence for handling big spatial data I
    Week 12: Artificial Intelligence for handling big spatial data II
    Week 13: Geoprivacy and Ethical Issues
    Week 14: GeoAI
    Week 15: Future Directions of Global Data

Grading Scheme
List the types of assessments, assignments and other activities that will be used to determine the course grade, and the percentage contribution from each. This list should have sufficient detail to evaluate the course rigor and grade integrity. Include details about the grading rubric and percentage breakdowns for determining grades. If participation and/or attendance are part of the students grade, please provide a rubric or details regarding how those items will be assessed.

    Response:
    Grading
    Assignments 40% (10%*4)
    Group project 25% (Report 15% + presentation 10%)
    Midterm exam 15%
    Final exam 20%

    Assignments
    1: Contributing VGI using OpenStreetMap & Examining landscape change using Google Earth
    2: Retrieving and analyzing (geo-tagged) Tweets using R
    3: RDBM (Microsoft Access) & NoSQL (MongoDB)
    4: Geo-visualizing big accident datasets in the UK using Kepler.gl

    Group Project
    3-4 students per group.
    Different project ideas/data are supplied OR students can develop their own 'real world' analysis
    Group will identify an existing big spatial data project - national or international
    Write up of initial idea must be approved
    Due dates for all steps on Canvas to keep groups and projects on track

    Grades for the course will be based on the following grading scale.
    Grading Scale:
    A   94-100%
    A- 90-93.9%
    B+ 87-89.9%
    B   83-86.9%
    B- 80-82.9%
    C+ 77-79.9%
    C   73-76.9%
    C- 70-72.9%
    D+ 67-69.9%

D 63-66.9%
D- 60-62.9%
E <60%

Instructor(s)
Enter the name of the planned instructor or instructors, or "to be determined" if instructors are not yet identified.

    Response:
    Dr. Jane Southworth, Dr. Sounny-Slitine OR either of the 2 new AI TT faculty currently being hired in Geography

Attendance & Make-up
Please confirm that you have read and understand the University of Florida Attendance policy.
A required statement statement related to class attendance, make-up exams and other work will be included in the syllabus and adhered to in the course. Courses may not have any policies which conflict with the University of Florida policy. The following statement may be used directly in the syllabus.

• Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

    Response:
    Yes

Accomodations
Please confirm that you have read and understand the University of Florida Accommodations policy.
A statement related to accommodations for students with disabilities will be included in the syllabus and adhered to in the course. The following statement may be used directly in the syllabus:

• Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

    Response:
    Yes

UF Grading Policies for assigning Grade Points
Please confirm that you have read and understand the University of Florida Grading policies.
Information on current UF grading policies for assigning grade points is require to be included in the course syllabus. The following link may be used directly in the syllabus:

• https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

    Response:
    Yes

Course Evaluation Policy
Course Evaluation Policy
Please confirm that you have read and understand the University of Florida Course Evaluation Policy.
A statement related to course evaluations will be included in the syllabus. The following statement may be used directly in the syllabus:

• Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/public-results/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

* *

    Response:
    Yes