Course Change Request

New Course Proposal

Date Submitted: 10/27/17 4:40 pm

Viewing: **GGS 210 : Introduction to Spatial Computing**

Last edit: 11/13/17 4:31 pm

Changes proposed by: sfuhrman

Are you completing this form on someone else's behalf?

No

Effective Term:
Fall 2018

Subject Code:
GGS - Geography & Geoinformation Science

Course Number:
210

Bundled Courses:

Equivalent Courses:

Catalog Title:
Introduction to Spatial Computing

Banner Title:
Intro Spatial Computing

Will section titles vary by semester?
No

Credits:
3

Schedule Type:
Lecture

Hours of Lecture or Seminar per week:
3

Repeatable:
May only be taken once for credit (NR)

Default Grade Mode:
Undergraduate Regular

Recommended Prerequisite(s):

In Workflow

1. **GGS Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. Assoc Provost-Undergraduate
5. Registrar-Courses
6. Banner

Approval Path

1. 11/13/17 4:32 pm Sven Fuhrmann (sfuhrman): Approved for GGS Chair

Recommended Corequisite(s):

Required Prerequisite(s) / Corequisite(s) (Updates only):

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?

Registration Restrictions (Updates only):

Registrar's Office Use Only - Registration Restrictions:

Field(s) of Study:

Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description:

This course introduces students to Geo-Spatial Data Analysis. Students will learn the basic techniques for data collection and storage, data processing and data mining using location data. Students will work with geospatial objects, such as points, lines and polygons and get hands-on experience in processing spatial data. Basic geometric algorithms for point-in-polygon tests and line-segment intersection tests will be presented. Techniques for spatial navigation, such as shortest path algorithm in free space and in spatial networks will be discussed. Technical challenges such as storing, reading and parsing geospatial will be highlighted and students will conduct geo-spatial data analysis in teams. To analyze data, this course will give an introduction to data analysis concepts including regression, clustering and classification of data. In addition, awareness will be raised for spatial privacy threats, and possible risks associated with uncontrolled publishing of location based data.

Justification:

This course provides an essential entry point towards higher-level geo-spatial data analysis courses in the BA and BS Geography programs.

Does this course cover material which crosses into another department?

No

Learning Outcomes:

Attach Syllabus

GGS 210 - Syllabus.pdf

Additional Attachments

Staffing:

Several department members can teach this course, e.g. Andreas Zuefle and Dieter Pfoser.

Relationship to Existing Programs:

This course will be part of the lower-level BA and BS Geography degree course options.

Relationship to Existing Courses:

This course will create the foundation for the upper-level GGS geo-analytics and geo-computation courses.

Additional Comments:

Reviewer Comments

Key: 15663