CE 182: INTRODUCTION TO GIS IN CIVIL ENGINEERING

In Workflow

1. CE Committee Chair (fogarty@csus.edu)
2. CE Chair (fellb@csus.edu)
3. ECS College Committee Chair (troy.topping@csus.edu)
4. ECS Dean (kevan@csus.edu)
5. Academic Services (torsetj@csus.edu;%20212408496@csus.edu;%20cnewsome@skymail.csus.edu)
6. Senate Curriculum Subcommittee Chair (curriculum@csus.edu)
7. Dean of Undergraduate (james.german@csus.edu;%20celena.showers@csus.edu)
8. Dean of Graduate (cnewsome@skymail.csus.edu)
9. Catalog Editor (212408496@csus.edu;%20torsetj@csus.edu;%20cnewsome@skymail.csus.edu)
10. Registrar's Office (wwd22@csus.edu;%20wlindsey@csus.edu;%20sac19595@csus.edu;%20danielle.ambrose@csus.edu; %20h.skocilich@csus.edu;%20205109584@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

Approval Path

1. Fri, 25 Oct 2019 14:26:43 GMT
   Julie Fogarty (fogarty): Approved for CE Committee Chair
2. Fri, 25 Oct 2019 14:30:51 GMT
   Benjamin Fell (fellb): Approved for CE Chair
3. Fri, 25 Oct 2019 16:33:01 GMT
   Troy Topping (troy.topping): Approved for ECS College Committee Chair
4. Fri, 25 Oct 2019 16:55:10 GMT
   Kevan Shafizadeh (kevan): Approved for ECS Dean

New Course Proposal

Date Submitted:Fri, 25 Oct 2019 14:25:01 GMT

Viewing:CE 182 : Introduction to GIS in Civil Engineering

Last edit:Fri, 25 Oct 2019 16:09:26 GMT

Changes proposed by: Julie Fogarty (218645519)

Contact(s):

Name (First Last)	Email	Phone 999-999-9999
Benjamin Fell	fellb@csus.edu	916-278-8139

Catalog Title:
Introduction to GIS in Civil Engineering

Class Schedule Title:
GIS in Civil Engineering

Academic Group: (College)
ECS - Engineering & Computer Science

Academic Organization: (Department)
Civil Engineering

Will this course be offered through the College of Continuing Education (CCE)?
No

Catalog Year Effective:
Fall 2020 (2020/2021 Catalog)

Subject Area: (prefix)
CE - Civil Engineering

Catalog Number: (course number)
182

Course ID: (For administrative use only.)
TBD

Units:
3

In what term(s) will this course typically be offered?
Fall term only

Does this course require a room for its final exam?
Yes, final exam requires a room

Does this course replace an existing experimental course?
No

This course complies with the credit hour policy:
Yes

Justification for course proposal:
This is NOT a new course. This course is currently CE 151, but is being submitted as a new course so that the current course number CE 151 can be archived and reused in Fall 2020.

Undergraduate CE courses are being renumbered to clarify course pre- and co-requisites and topic areas to help students plan their path to graduation. Prerequisites numbers (not courses) are being changed to reflect course number changes.

Through curriculum paper forms in 2016, each CE course had the "Not currently enrolled in CE XXX" as a prerequisite approved, so that students could not register for a "CE" prefix course if they were currently enrolled in it. This was to prevent students who thought they were failing from giving up or taking up a seat they didn't need if they passed the course. That prefix managed to make it into the online system for only one or two classes and is being put through curriculum workflow again.

Course classification was changed from large lecture to lecture because there are fewer than 50 students enrolled each semester.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)
Fundamental geographic information system (GIS) concepts; GIS data acquisition and analysis; GIS analytical methods. Lab exercises with GIS software used to introduce students to typical uses of GIS in civil engineering. This course may be paired with the graduate-level course GIS Applications in Civil Engineering. Lecture two hours; laboratory three hours.

Are one or more field trips required with this course?
No

Fee Course?
No

Is this course designated as Service Learning?
No

Does this course require safety training?
No

Does this course require personal protective equipment (PPE)?
No

Does this course have prerequisites?
Yes

Prerequisite:
ENGR 115, CE 9, CE 9L, and (CE 130 or CE 140 or CE 150 or CE 170). Not currently enrolled in CE 182.

Prerequisites Enforced at Registration?
Yes

Does this course have corequisites?
No

Graded:
Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Laboratory
Lecture

Laboratory Classification

CS#16 - Science Laboratory (K-factor=2 WTU per unit)

Laboratory Units

1

Lecture Classification

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

Lecture Units

2

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc."

Students will be able to:

1. Demonstrate knowledge of fundamental GIS concepts and principles.
2. Differentiate geospatial data types, data sources, and metadata management techniques.
3. Develop basic GIS skills using core components and functionality of ArcGIS and other software.
4. Apply ArcGIS and other software to create, manipulate and query geospatial data.
5. Demonstrate the use of GIS as an analysis and display tool of quantitative and spatial data.
6. Demonstrate the ability to work with GIS data and apply basic analytical methods to solve spatial problems.
7. Develop the ability to work with GIS data and apply specific geoprocessing techniques to solve civil engineering problems.
8. Analyze GIS results for civil engineering projects.
9. Effectively convey GIS information and analyses to decision makers

Attach a list of the required/recommended course readings and activities:

2020 Fall - CE182 - Syllabus.doc

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.

Assignments, quizzes, labs, exams, project (ELO 1-9)

For whom is this course being developed?

Majors in the Dept

Is this course required in a degree program (major, minor, graduate degree, certificate?)

No

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Undergraduate Learning Goals:

Competence in the disciplines
Knowledge of human cultures and the physical and natural world
Integrative learning
Intellectual and practical skills

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)

Is this a General Education (GE) course or is it being considered for GE?

No

Key: 14194