SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

New Course Request

SDSU	**Natural Sciences / Geography & Geospatial Sciences**
Institution	**Division/Department**
Dennis D. Hedge	3/25/2020
Institutional Approval Signature	**Date**

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
GEOG 471	Introduction to GIS Programming	3
GEOG 571	Introduction to GIS Programming	3

Course Description

This course aims to help students develop programming skills for GIS. Specifically, this course covers the following topics: fundamentals of programming, object-oriented programming (OOP), software development life cycle, GIS data processing, and popular GIS libraries.

Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
GEOG 372	Introduction to Geographic Information Systems	Pre-requisite
INFO 101	Introduction to Informatics	Pre-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Was the course first offered as an experimental course? ☐ Yes ☒ No

2.2. Will this be a unique or common course?

☒ Unique Course

Prefix & No.	Course Title	Credits
CSC 150	Computer Science I	3
CSC 130	Visual Basic Programming	3

Provide explanation of differences between proposed course and existing system catalog courses below:

The proposed new course will focus on how to use a programming language to process and analyze big spatial data in the field of Geographic Information Science (GIS). CSC 130 and 150 are general-purpose programming courses and are not tailored for spatial data.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

☒ No. Schedule Management, explain below: This course is an area of specialty for a new faculty member and be added into his normal teaching rotation. It will be taught once a year or every three semesters.

3.2. Existing program(s) in which course will be offered: Geography (B.S., M.S.), Geographic Information Sciences (B.S.), Geography (M.S.) – Geographic Information Sciences Specialization

3.3. Proposed instructional method by university: R – Lecture

3.4. Proposed delivery method by university: 001 – Face-to-Face Term Based Instruction; 018 – Internet Synchronous

3.5. Term change will be effective: Fall 2020

3.6. Can students repeat the course for additional credit? ☐ Yes, total credit limit: ☒ No

3.7. Will grade for this course be limited to S/U (pass/fail)? ☐ Yes ☒ No

3.8. Will section enrollment be capped? ☒Yes, max per section: 15 ☐ No

3.9. Will this course equate (i.e., be considered the same course for degree completion) with any other unique or common courses in the common course system database in Colleague and the Course Inventory Report? ☐ Yes ☒ No

3.10. Is this prefix approved for your university? ☒ Yes ☐ No

Section 4. Department and Course Codes (Completed by University Academic Affairs)

4.1. University Department Code: SGGS

4.2. Proposed CIP Code: 45.0702

Is this a new CIP code for the university? ☐ Yes ☒ No

NEW COURSE REQUEST
Supporting Justification for On-Campus Review

Bob Watrel	Bob Watrel	2/3/2020
Request Originator	**Signature**	**Date**
Bob Watrel	Bob Watrel	2/3/2020
Department Chair	**Signature**	**Date**
Matt Miller	Matt Miller	2/3/2020
School/College Dean	**Signature**	**Date**

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
   GIS Programming plays a significant role and growing role in the field of Geographic Information Science. In the age of big data, GIS programming will be needed to manage, process, and analyze big geospatial data. This course aims to introduce the fundamentals of programming and GIS data processing, which can help students better manage and analyze big geospatial data and become more competitive on the job market.
2. Note whether this course is: Required ☒ Elective
3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
   Data Science, Geography, Conservation Planning and Park Management, Wildlife and Fisheries Sciences, Ecology and Environmental Science
4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.
   Graduate and undergraduate sections of the class are evaluated separately. Students enrolled in the graduate section of the course will be required to answer additional lab questions and complete a more difficult final project.
5. Desired section size 15
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).

Dapeng Li, Assistant Professor, Ph.D.

7. Note whether adequate facilities are available and list any special equipment needed for the course.
   Department of Geography and Geospatial Sciences has the computer labs and ArcGIS software licenses for this course.
8. Note whether adequate library and media support are available for the course.
   This is adequate library support.
9. Will the new course duplicate courses currently being offered on this campus? ☐ Yes ☒ No
10. If this course may be offered for variable credit, explain how the amount of credit at each offering is to be determined.
    N/A