

CERTIFICATE IN GEOGRAPHIC INFORMATION SYSTEMS



SACRAMENTO STATE

In Workflow

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Approval Path

1. Tue, 15 Oct 2024 22:08:32 GMT
Matt Schmidtlein (schmidmc): Rollback to Initiator
2. Mon, 21 Oct 2024 18:06:29 GMT
Matt Schmidtlein (schmidmc): Approved for GEOG Chair
3. Thu, 07 Nov 2024 01:24:31 GMT
Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
4. Mon, 18 Nov 2024 16:13:25 GMT
Chris Taylor (ctaylor): Approved for NSM Dean

New Program Proposal

Date Submitted: Tue, 15 Oct 2024 23:02:18 GMT

Viewing: Certificate in Geographic Information Systems

Last edit: Thu, 07 Nov 2024 01:24:19 GMT

Changes proposed by: Anna Patterson (219679266)

Academic Group: (College)

Natural Sciences & Mathematics

Academic Organization: (Department)

Geography

Catalog Year Effective:

2025-2026 Catalog

NOTE: This degree major program will be subject to program review evaluation within six years after implementation.

Individual(s) primarily responsible for drafting the proposed degree major program:

Name (First Last)	Email	Phone 999-999-9999
Anna Patterson	anna.kp@csus.edu	916-278-4272

Type of Program:

Certificate

Is this a pilot program?

No

Delivery Format:

Fully Face to Face

Title of the Program:

Certificate in Geographic Information Systems

Designation: (degree terminology)

Certificate - Undergraduate

Abstract of the proposal:

The Certificate in Geographic Information Systems (GIS) will meet the needs of undergraduate students seeking geospatial knowledge and technical skills, and may help students attain jobs after graduation by addressing the fact that some workforce industries strongly value certificates (ex: Health & Human Services). Students will take coursework in already existing classes related specifically to geographic information systems. By completing this certificate, students will enhance their marketability upon graduation by possessing documented evidence of foundational knowledge in GIS. The certificate will not require additional resources and existing courses have capacity for increased enrollments. The certificate is open to all majors, and students in Geography can earn the certificate along the way to completing their major program, regardless of concentration.

Briefly describe the program proposal (new or change) and provide a justification:

The purpose of this proposal is to create a Certificate in Geographic Information Systems (GIS) to meet the needs of undergraduate students seeking geospatial knowledge and technical skills, and addresses the fact that certain workforce industries values certificates over minors (ex: Health & Human Services). Students will take foundational coursework in geographic information systems and data acquisition and management, critical skills needed by any modern GIS practitioner. Students will have the opportunity to select GIS-specific electives. By completing this certificate, students will enhance their marketability upon graduation by possessing documented evidence of focused coursework in GIS. This certificate is different than the minor or concentration in Geographic Information Science because it focuses coursework is targeted specifically to GIS as a tool, and the electives are limited accordingly.

This certificate fills a gap for many students in programs where certificates are more valued than minors, or in industries where a certificate in GIS is more applicable than a minor or dual concentration. This certificate will enhance student success by equipping them with targeted, advanced GIS skills needed in the workforce while providing formal recognition on their academic transcript.

Students will take coursework in already established classes, completing a subset of coursework necessary for the minor in GIS or the concentration in Geographic Information Science. The certificate provides the potential to increase FTES in these already established classes at no additional cost because these courses have capacity for increased enrollments.

The certificate (12 units) can be completed in a minimum of two semesters: Fall GEOG 109 and a certificate elective; Spring GEOG 155 (GEOG 109 pre-requisite) and their remaining certificate elective. It is possible for a student to complete the certificate along with their major program within the minimum 120 units for the degree, depending on how many units of overlapping credits the student has in their program of study.

University Learning Goals**Undergraduate Learning Goals:**

Competence in the disciplines
Intellectual and practical skills
Personal and social responsibility
Integrative learning

Program Learning Outcomes

Program Learning Outcomes

Learning Outcome

Describe how a wide range of geographic techniques can be used to support spatial analyses.

Demonstrate an understanding of how core vector and raster analytical models can be used to solve spatial problems.

Explain the concepts and foundations of spatial data and geographic information systems (GISs).

Identify and implement strategies in GIS data acquisition and management processes, including clearly documenting procedures, primary and secondary GIS data, and leveraging leading-edge geospatial deployments.

Learning Outcomes Display

Course Code	PLO 1	PLO 2	PLO 3	PLO 4
GEOG 109				
GEOG 155				
GEOG 105				
GEOG 107				
GEOG 110				
GEOG 150				
GEOG 151				
GEOG 163				

Will this program be 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

Please attach the updated roadmap:

GISCert_SmartPlanner.docx

Catalog Description:

The Certificate in Geographic Information Systems (GIS) is designed to equip students with the technical skills and knowledge needed to collect, manage, analyze, and interpret geographic data. This program provides a foundational understanding of GIS technologies and their applications across various industries, including urban planning, environmental-based sciences, public health, business analytics, engineering, transportation, agriculture, disaster management, public works, energy, and consulting. Through hands-on learning, students will develop proficiency in using industry-standard GIS software and tools to visualize and solve spatial problems.

Admission Requirements: Course prerequisites and other criteria for admission of students to the degree major program, and for their continuation in it.

Open to all degree-seeking students at Sacramento State University.

Program Requirements: (If new courses are being created as part of a new program, it will be useful to propose courses first.)

To receive the Certificate in Geographic Information Systems, students must:

- be working towards a degree at Sacramento State
- achieve a minimum 2.5 cumulative GPA in certificate program courses:

Required Courses (6 units)

Code	Title	Units
GEOG 109	Geographic Information Systems	3
GEOG 155	GIS Data Acquisition and Management	3

Elective Courses (6 units)

Code	Title	Units
GEOG 105	Cartography	3
GEOG 107	Remote Sensing	3
GEOG 110	Advanced Geographic Information Systems	3

GEOG 150	Programming for GIS	3
GEOG 151	Programming for GIS II	3
GEOG 163	Applied GIS	3

Attach the results of a formal survey in the geographical area to be served indicating demand for individuals who have earned the proposed degree and evidence of serious student interest in majoring in the proposed program:

Geographers_OccupationalOutlookHandbook_USBureauOfLaborStatistics.pdf

Provide justification for any discrepancies between national/statewide/professional manpower surveys and local findings:

This is for a certificate program, not a major or minor program.

For graduate programs, the number of declared undergraduate major and the degree production over the preceding years of the corresponding baccalaureate program:

This Form B is for a certificate program, not a major program

Professional uses of the proposed degree major program:

This Form B is for a certificate program, not a major program

The expected number of majors in:

1st Year Enrollment:

0

3rd Year Enrollment:

0

5th Year Enrollment:

0

1st Year Graduates:

0

3rd Year Graduates:

0

5th Year Graduates:

0

Reviewer Comments:

Matt Schmidlein (schmidmc) (Tue, 15 Oct 2024 22:07:59 GMT): Department faculty expressed concerns about potential impacts of proposal on enrollment in elective techniques courses. Please propose revisions to certificate addressing these concerns.

Matt Schmidlein (schmidmc) (Tue, 15 Oct 2024 22:08:32 GMT): Rollback: As per note

Matt Schmidlein (schmidmc) (Mon, 21 Oct 2024 18:06:23 GMT): Approved by Geography Department faculty on 10/21/2024 with requirement to reassess two years after implementation.

Key: 584