

## CALIFORNIA STATE UNIVERSITY SAN MARCOS

For Academic Programs Office Use Only

R. E. \_\_\_\_\_ Catalog \_\_\_\_\_ File \_\_\_\_\_

## PROGRAM CHANGE PROPOSAL - Form P-2

COLLEGE ☒ CHABSS ☐ CoBA ☐ CoEHHS ☐ CSM

TITLE OF PROGRAM Certificate in Applied GIS

Discipline Geography

Check one: ☒ Change to Program☐ Program Deletion

TITLE OF DEGREE PROGRAM: Certificate in Geographic Information Systems

This form is the signature sheet for a change to, or deletion of, an existing program.

Note that the addition of a new option/concentration/emphasis/track is a new "program," and requires the use of Form P.

For a change to a program,

1. Attach a page (or pages) giving a brief summary of the purpose of this proposal, and its connection to the mission and student learning outcomes of the program.
2. Attach catalog copy showing exactly how the program should appear in the catalog if the changes are approved.

For a program deletion, attach a statement explaining the impact on students: how will the program be "taught-out" for declared majors?Does this proposal impact other disciplines or units? \_\_\_\_\_ Yes ☒ NO ☒ No If yes, obtain signature(s).

Any objections or concerns should be stated in writing and attached to this form. Please check the box to indicate whether a memo has been attached.

Discipline/Unit	Signature	<input type="checkbox"/>	Date	Support	Oppose
Discipline/Unit	Signature	<input type="checkbox"/>	Date	Support	Oppose
Discipline/Unit	Signature	<input type="checkbox"/>	Date	Support	Oppose
Discipline/Unit	Signature	<input type="checkbox"/>	Date	Support	Oppose

1. Greig Guthey March 10, 2017  
Originator (Please Print) Date2. Kim K. Young 3/14/17  
Program/Department Director/Chair Date

## APPROVAL PROCESS

3. [Signature] 4/12/17  
College Curriculum Committee^ Date4. [Signature] 4/12/17  
College Dean (or Designee)^ Date5a. [Signature] [ ]  
University Curriculum Committee^ Date5b. [Signature] [ ]  
Budget and Long-Range Planning Committee (if applicable)^ Date6. [Signature] [ ]  
Academic Senate Date7. [Signature] [ ]  
Provost (or Designee) Date8. [Signature] [ ]  
President Date9. [Signature] [ ]  
Date to Chancellor's Office (if applicable)

\* Where appropriate, attach a memo on program impact on the unit and the ability of the unit to support it. Check the box next to the signature line to indicate whether a memo has been attached.

^ Where appropriate, attach a memo summarizing the curricular and/or resource deliberations. Check the box next to the signature line to indicate whether a memo has been attached.



**P-2 Program Change Proposal**  
**CHABSS, Liberal Studies, Certificate in Applied GIS (offered through Extended Learning)**  
**Originator – Greig Tor Guthey**

**Title of Program:** Certificate in Applied Geographic Information Systems

**Proposal:** The original certificate in GIS is not configured in a way that will attract students to the program because it has been learned through additional program research and discussions with community partners that students are getting much of the same material through a parallel program at Palomar College. Because of this the sequence of courses needs to be adjusted to be more focused on more complex skills development to make it more relevant to students in our service area and the changing GIS landscape.

**Proposed Changes:**

First, we are proposing to change the name slightly (but not the substance generally) of the current program. Thus the name if possible we would like to change to Certificate in Geographic Information Systems.

Second, we are proposing to make the pre-requisites for entry into the program more flexible to increase enrollment and better respond to student needs. Thus, we are removing the 14 unit credit requirement.

Third, we are proposing to remove Geography 320, Geography 330, and Geography 435 from the certificate. These courses will be replaced with three new courses.

Fourth, the three new courses to be added to the program are:

- a) GEOG 335: Advanced Spatial Analysis. The C form is attached for your information and is already in the curriculum process.
- b) GEOG 431: Remote Sensing. The C form is attached for your information and is already in the curriculum process.
- c) GEOG 433: Programming for GIS. The C form is attached for your information and is being submitted concurrently to the curriculum committees.

**Language for Proposed Changes to the Catalog:**

The current catalog copy with edits is attached for your information. We propose to replace the ENTIRE Catalog copy for the certificate in Applied Geographic Information Systems with the following:

CERTIFICATE IN GEOGRAPHIC INFORMATION SYSTEMS\* Geographic Information Systems (GIS) allow users to map and analyze spatial data in a whole range of fields including, among others, city planning, environmental management, fire services, and marketing. However, the field for Geographic Information Science is rapidly evolving with the development of advanced cyber infrastructure, big data and the internet of things, among others. This certificate provides professionals, students and job-seekers with advanced training required to navigate this changing field and effectively apply GIS to real world situations.

Students in the program learn to effectively convey the value of geospatial data to stakeholders in diverse contexts as well as its proper uses and applications. The program covers: i) advanced geospatial techniques

including spatial statistics, pattern analysis, spatial interaction, and raster and vector data models; ii) Remote sensing and applications including data capture, image processing and data analysis; iii) Programming, including R, Python and WebGIS, and; iv) cartography and geovisualization including cartographic principles, design, thematic mapping and non-traditional map display methods, and interpretation and analysis.

The certificate is based on standards contained in the Association of American Geographers' Geographic Information Science and Technology Body of Knowledge and in the Urban and Regional Information Systems Association's Geospatial Management Competency Model. The program also serves as solid preparation for a number of ESRI ArcGIS Desktop Certification Exams.

Eligibility for this program requires sufficient competency in GIS as evidenced by:

- lower division undergraduate GIS coursework OR experience.

The 12-unit program requires completion of four 3-unit courses:

GEOG 335	3
GEOG 430	3
GEOG 431	3
GEOG 433	3
<b>Total Units</b>	<b>12</b>

On advisement, and with prior consultation, the certificate may be tailored to accommodate diverse organizational training needs through the use of additional coursework such as GEOG 435, which provides applied experience in GIS.

Delete "Applied"

**CERTIFICATE IN ~~APPLIED~~ GEOGRAPHIC INFORMATION SYSTEMS\***

Geographic Information Systems (GIS) are digital tools for analyzing and mapping spatial data in a whole range of fields from local planning to marketing and international aid. This certificate in Applied GIS provides professionals, students and job-seekers with an opportunity to acquire and document higher level analytical skills required for applying geospatial tools toward problem solving. This certificate combines skills and knowledge of four domains: i) substantive geography and basic geospatial analytical techniques; ii) GIS skills obtained through advanced GIS coursework; iii) ethics and decision making, and; iv) synthesizing GIS learning through completion of a real-world project.

In order to be eligible for this Certificate Program, students are required to show sufficient competency in GIS as evidenced by:

- Transcripts showing satisfactory completion of 14 units undergraduate GIS coursework to include Introduction to GIS and GIS Software, GIS Database Management and Acquisition, GIS Applications and Programming, Intermediate ArcGIS: GIS Analysis, and GIS Internship; or equivalents; OR
- Submission of a real-world project displaying their ability in GIS.

Delete "Applied"

Delete : Replace as noted on P2 Form

The 12-unit program requires completion of four 3-unit courses:

GEOG <del>320</del>	3
GEOG <del>330</del>	3
GEOG <del>430</del>	3
GEOG <del>435</del>	3
<b>Total Units</b>	<b>12</b>

Change to 335

Change to 430

Change to 431

Change to 433

\*The Certificate of ~~Applied~~ GIS is offered through Extended Learning.

Delete "Applied"