**Program Proposal**

**Form B**

<table>
<thead>
<tr>
<th>Academic Group (College):</th>
<th>Date of Submission to College Dean:</th>
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<tbody>
<tr>
<td>Natural Sciences &amp; Mathematics</td>
<td>11-30-09</td>
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</tbody>
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**Academic Organization (Department):** Geography Department

**Requested Effective:** Fall_X_, Spring__, 2010.

**Department Chair:** Robin Datel

**Contact if not Department Chair:**

**Title of the Program (Please be specific: indicate minor, undergraduate or graduate degree, etc.):** Geographic Information Systems Minor

**Type of Program Proposal:**

- [ ] Modification in Existing Program:
  - [X] Substantive Change
  - [ ] Non-Substantive Change
  - [ ] Deletion of Existing Program

- [X] New Programs
  - [ ] Initiation (Projection) of New Program on to Master Plan
  - [ ] New Degree Programs
    - [ ] Regular Process
    - [ ] Fast Track Process
    - [ ] Pilot Process
  - [X] New Minor, Concentration, Option, Specialization, Emphasis
  - [ ] New Certificate Program

**PLEASE NOTE:** Form B is to be used only as a Cover Form. Additional information is requested for each of the above as noted in the corresponding procedure in the Policies and Procedures for Initiation, Modification, Review and Approval of Courses and Academic Programs found at [http://www.csus.edu/umanual/acad.htm](http://www.csus.edu/umanual/acad.htm)

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

The Geography Department is proposing a new Geographical Information Systems Minor. It would require the same total number of units (18) as our existing Geography Minor, but is aimed at those students who want to focus more strictly on GIS and related spatial techniques rather than on the broader discipline of Geography.

**Approvals:**

**Department Chair:** Robin Datel  
**Date:** 12-13-09

**College Dean:**  
**Date:** 12/16/09

**University Committee:**  
**Date:**

**Associate Vice President and Dean for Academic Affairs:**  
**Date:**
Proposal for a New Geographic Information Systems Minor
CSUS Department of Geography
November 30, 2009

1. Complete Form B. Form B has been completed. ☑

2. Name of the campus submitting the request, the full and exact title of the proposed aggregate of courses, and whether it is an option, concentration, special emphasis, or minor. California State University Sacramento. Geographic Information Systems (GIS) Minor. ☑

3. Full and exact title of the degree major program under which the aggregate of courses will be offered, where applicable. Geography Major. ☑

4. Options, concentrations, or special emphases already existing under the degree major program for which the new aggregate of courses is proposed. The Geography Major at Sacramento State has four concentrations, which were recently updated and approved and will be effective Fall 2010. The concentrations are Human Geography, Physical Geography, Geographic Information Systems and Analysis, and Metropolitan Area Planning. There is also an existing Geography Minor. ☑

5. Department(s) to offer the aggregate of courses and name of contact person. Geography Department. Robin Datel, Chair. ☑

6. Purpose of the proposed aggregate of courses. The proposed GIS Minor is aimed at meeting the needs of those students who want to focus their minor more strictly on GIS and related geospatial techniques rather than on the broader discipline of Geography. The Geography Department sees the legitimacy and value of both a broad Geography Minor (say, to complement the History major of a student headed toward high school social science teaching) and of a narrow, more technical GIS Minor (say, to complement a Criminal Justice Major being pursued by someone interested in crime mapping or a Biological Sciences Major/Conservation Concentration being pursued by someone interested in species and habitat distributions).

7. Need for the proposed aggregate of courses. Many private and public sector employers continue to want employees with GIS skills. By adding a GIS minor to their major (and GIS complements many majors, from business to civil engineering to sociology), students improve their employability. Before the recession, our students with GIS skills found it easy to find paid internships. One of our recent graduates was told that she won a competitive graduate research position because of her GIS skills, which most applicants lacked. We think that a GIS Minor will help some CSUS students become more competitive in the marketplace and also will be a backdoor through which students will be introduced to the broader discipline of geography, which itself uses GIS and other geotechniques to study topics ranging in scale from global climate change to the pedestrian-friendly design of individual city blocks.
8. List of the courses, by catalog number, title, and units of credit, as well as total units to be required under the proposed aggregate of courses.

**Geographic Information Systems Minor**
Total units required for Minor: 18

**A. Required Courses: (9 Credits)**
(3) Geog 3  Introduction to Maps and Geographic Technologies
(3) Geog 109  Geographic Information Systems
(3) Geog 110  Advanced Geographic Information Systems

**B. Upper Division Electives: Three of the following upper division courses (9 Credits):**
(3) Geog 105  Computer Cartography
(3) Geog 107  Remote Sensing
(3) Geog 163  Applied Geographic Information Systems
(3) Geog 181  Spatial Analysis
(3) Geog 182  Internet Geographic Information Systems
(3) Three credits of upper division GIS coursework from another department with permission of the GIS Minor advisor.

9. New courses to be developed. Include proposed catalog descriptions and course classifications. *No new courses are proposed to be developed at this time. Furthermore, while GEOG 182 is on the books, we are not proposing to teach it under the current budgetary circumstances.*

10. List of courses, by catalog number, title, course classification, and units of credit as well as total units to be required for the major in which the proposed aggregate of courses is to be included. Show a two-year scheduling pattern of these courses and indicate the number of additional courses and sections of classes that will be required to implement the program. See #8 above for most of this information. GEOG 3, 105, 107, 109, 110, 163, and 182 are lecture-lab courses. GEOG 181 is a lecture-discussion course. Currently, two sections of GEOG 109 are offered every semester. GEOG 105 and 110 are taught every fall. GEOG 3, 107, 163, and 181 are taught every spring. GEOG 182 is currently not being offered. We proposed to stick with this pattern.

11. List of all present faculty members, with rank, appointment status, highest degree earned, date and field of highest degree, and professional experience, who would teach in the proposed aggregate of courses.

**Professor Miles Roberts** (tenured); Ph.D., Geography, 1990. Professor Roberts has taught our courses in introductory GIS, advanced GIS, remote sensing, and spatial analysis.

**Associate Professor Michael Schmandt** (probationary); Ph.D., Geography, 1995. Professor Schmandt has taught our introduction to mapping and geographic technologies, cartography, spatial analysis, and applied GIS. He taught introductory GIS at his previous academic institution, CSU Stanislaus. His free GIS e-textbook is at http://giscommons.org/.
Assistant Professor Mathew Schmidtlein (probationary); PhD., Geography, 2008. Professor Schmidtlein has taught our advanced GIS and spatial analysis courses.

12. Indicate according to the questions below the resources needed to implement the program change.

13. How will the above changes be accommodated within the department/College existing fiscal resources? All courses in the proposed minor are already on the books. We do not anticipate that implementing the minor will generate enough added demand for these courses to require additional sections. Our broader Geography Minor currently has about a dozen students in it, and we expect a lower number than that for a GIS Minor, at least in the first few years. If the GIS Minor proves more popular than anticipated, then we would have to weigh options such as enlarging class size or offering some of the classes during summer session.

14. If the proposed changes will require additional resources, describe the level and nature of additional funding the College will seek. As noted above, we do not anticipate the need for additional College resources.

15. What additional space, equipment, operating expenses, library, computer, or media resources, clerical/technical support, or other resources will be needed? Estimate the cost and indicate how these resource needs will be accommodated. We are proposing to teach any new GIS minors with our existing resources. This includes our existing schedule of classes, computer labs and other classrooms, software, technical support (limited though it is), etc.

Provide catalog copy for the proposed new concentration, emphasis, option or minor, using the standard catalog copy format.

Requirements - Geographic Information Systems Minor

Total units required for Minor: 18

(9) The following three courses:

GEOG 3 Introduction to Maps and Geographic Technologies

GEOG 109 Geographic Information Systems

GEOG 110 Advanced Geographic Information Systems

(9) Three of the following courses:

GEOG 105 Computer Cartography
GEOG 107  Remote Sensing
GEOG 163  Applied Geographic Information Systems

GEOG 181  Spatial Analysis

GEOG 182  Internet Geographic Information Systems

Three credits of upper division GIS coursework from another department with permission of the GIS Minor advisor.

Courses must be selected in consultation with and approved by a faculty advisor in geography. A minimum of 6 upper division units must be earned in residence.