

**California State University, San Marcos General Education Program  
GENERAL EDUCATION NEW COURSE CERTIFICATION REQUEST**

GEOG 120  
Area D

**• AREA D: Social Science**

*See GE Handbook for information on each section of this form*

**ABSTRACT**

<b>Course Abbreviation and Number: GEOG 120</b>		<b>Course Title: Introduction to Geographic Information Systems (GIS)</b>	
<b>Number of Units: 4</b>			
<b>College or Program:</b> <input checked="" type="checkbox"/> CHABSS <input type="checkbox"/> CSM <input type="checkbox"/> CEHHS <input type="checkbox"/> COBA <input type="checkbox"/> Other _____		<b>Desired term of implementation:</b> <input type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring <input type="checkbox"/> Summer   Year: 2018	<b>Mode of Delivery:</b> <input checked="" type="checkbox"/> face to face <input type="checkbox"/> hybrid <input type="checkbox"/> fully on-line
<b>Course Proposer (please print): Elizabeth Ridder</b>		<b>Email: eridder@csusm.edu</b>	<b>Submission Date: 01/23/2017</b>

**1. Course Catalog Description:** Introduces students to the basic principles and applications of Geographic Information Science (GiScience) and Geographic Information Systems (GISystems). Topics include cartographic basics, map projections, Global Positioning Systems, common spatial data models, database aspects, and spatial representation and visualization. Includes lab.

**2. GE Syllabus Checklist: The syllabi for all courses certified for GE credit must contain the following:**

<input checked="" type="checkbox"/>	Course description, course title and course number
<input checked="" type="checkbox"/>	Student learning outcomes for General Education Area and student learning objectives specific to your course, linked to how students will meet these objectives through course activities/experiences
<input checked="" type="checkbox"/>	Topics or subjects covered in the course
<input checked="" type="checkbox"/>	Registration conditions
<input checked="" type="checkbox"/>	Specifics relating to how assignments meet the writing requirement
<input checked="" type="checkbox"/>	Tentative course schedule including readings
<input checked="" type="checkbox"/>	Grading components including relative weight of assignments

**SIGNATURES**

*[Signature]*      30 JAN 2017  
 Course Proposer      Date

*Kim Knowles-Jainy*      1/27/17  
 Department Chair      Date

*Please note that the department will be required to report assessment data to the GEC annually.*

*[Signature]*  
 DC Initial

		Support	Do not support*			Support	Do not support*
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Library Faculty	Date			Impacted Discipline Chair	Date		
		Support	Do not Support*			Approve	Do not Approve
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Impacted Discipline Chair	Date			GEC Chair	Date		

\* If the proposal is not supported, a memo describing the nature of the objection must be provided.

Course Coordinator: Elizabeth Ridder Phone: x8298 Email: eridder@csusm.edu

*Tracker ✓*  
*GE Review ✓*  
*Ps ✓*

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*Part A: D Social Science General Education Learning Outcomes (GELOs) related to course content. [Please type responses into the tables.]*

<b>Social Science GELOs this course will address:</b>	<b>Course content that addresses each GELO.</b>	<b>How will these GELOs be assessed?</b>
<p>D.1 Students will describe and critically apply social science theories and methods to problems. This may include the development of research questions, critical evaluation of evidence, data collection, fieldwork, and/or employment of mathematical analysis.</p>	<p>Students will collect GPS data (data collection and field work), and in their lab write-up, discuss the sources of potential error in their data collection (basic research design), and provide suggestions for improvement in their methodology. They will be required to evaluate the accuracy of their data, and perform an analysis (e.g., clustering). They will discuss their results, as well as other methods that may be appropriate to evaluate their data.</p> <p>The course is designed to lead students through understanding GIS and its application to real world problems. Thus, the labs are focused on identifying research questions for a GIS environment, evaluation of evidence (primary and secondary), collection of data through fieldwork, and various types of spatial analysis at an introductory level.</p>	<p>Students are assessed through weekly lab exercises that require students to address at least one component: research question, critical evaluation of evidence, data collection, fieldwork, or employment of mathematical analysis.</p> <p>The intent is to build up to the final project that demonstrates inclusion of all components.</p>
<p>D.2 Students will analyze the impact of race, class, gender and cultural context on individuals and/or local and global societies.</p>	<p>Using Geographic Information Systems to analyze and visualize the spatial relationships of variables, students will use different data classification schemes to investigate the impacts on certain representation in voting districts. Students could also find data to examine spatial relationships between race, ethnicity, and gender and income, housing types, and education.</p>	<p>Students are assessed through a combination of completed lab exercises, written exams, and the incorporation of the information from the GIS exercises into their final projects.</p>
<p>D.3 Students will outline the contemporary and/or historical perspectives of major political, intellectual, psychological, economic,</p>	<p>Course readings, lectures, and lab assignments will address the historical development of spatial analysis, its applications,</p>	<p>Students will be assessed via specific exam questions asking students to construct a time line, to</p>

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scientific, technological, or cultural developments	and the technologies utilized to solve questions with spatial data. Students will be asked to describe the development of GPS in the United States and discuss an example of its contemporary use for scientific investigation (in any field).	create a diagram, or to outline the major developments in GIS-related technologies.
D.4 Students will explain the usefulness of a disciplinary perspective and field of knowledge for social issues and problems.	As part of lab exercises, students will apply spatial analysis tools to evaluate where and why things occur where they do, and how these patterns change over time. Students will use the information derived from spatial data to address questions relating to social issues and problems. For instance, students will map (e.g., digitize or find a database with relevant data) lead concentrations in drinking water that exceed EPA regulatory limits. They could then investigate if the lead concentrations change over time, or potential relationships to specific geology, industry, or socio-economic status.	Students are assessed through a combination of completed lab exercises, written exams, and the incorporation of the spatial data exercises in their final projects.

**Part B: General Education Learning Outcomes required of all GE courses related to course content:**

<b>GE Outcomes required of <u>all</u> Courses</b>	<b>Course content that addresses each GE outcome?</b>	<b>How will these GELOs be assessed?</b>
Students will communicate effectively in writing to various audiences. (writing)	Students are required to complete weekly lab exercises where they explain the outcomes of that day's lab exercise (e.g., results of analysis), why they made specific analytical choices (self-reflection), and how the concepts and skills apply to their discipline.  Students create a larger individual project, which will require them to structure their papers according to discipline specific standards (e.g., following a journal format or other accepted professional reporting standard).	Students are assessed via rubric, based on their ability to clearly articulate their methods of analysis and interpretation of results. Successful individual projects will summarize relevant primary sources and relate analytical results to course concepts and primary sources.
Students will think critically and analytically about an issue, idea or problem. (critical thinking)	Lab exercises, exams, and the individual project will require students to integrate course material, and apply their knowledge to a problem, issue, or case study.	Students are assessed on their ability to relate course concepts to each other, and to apply these course concepts to analytical results.
Students will find, evaluate and use information appropriate to the course and discipline. (Faculty are strongly	Students are required to complete reading assignments to supplement instruction.	Students are assessed on their ability to find and use appropriate data to address a specific question, problem, or

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<p>encouraged to collaborate with their library faculty.)</p>	<p>As the semester progresses, students will increasingly work independently to locate data, select the appropriate analytical tools, and to interpret the results of their analysis. This may require additional reading to examine the appropriate tools for a specific question or data set, which will require the students to conduct literature and information searches that are relevant to geography, GIS, and their discipline.</p>	<p>case study. As part of their individual project, students will be assessed on their ability to locate relevant primary sources, and to relate these articles to their data analysis interpretation. For example, if a student project investigated differing perceptions of the CSUSM campus by asking a sample of other students to construct a mental map of the campus, then the student will need to find, summarize, and relate articles on constructing surveys, mental maps, and how to interpret results from surveys.</p>
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**Part C: GE Programmatic Goals: The GE program aligns with CSUSM specific and LEAP Goals. All D courses must meet at least one of the LEAP Goals.**

<b>GE Programmatic Goals</b>	<b>Course addresses this LEAP Goal:</b>
LEAP 1: Knowledge of Human Cultures and the Physical and Natural World.	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
LEAP 2: Intellectual and Practical Skills	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
LEAP 3: Personal and Social Responsibility	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
LEAP 4: Integrative Learning	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
<b>CSUSM Specific Programmatic Goals</b>	<b>Course content that addresses the following CSUSM goals. Please explain, if applicable.</b>
CSUSM 1: Exposure to and critical thinking about issues of diversity.	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please describe): <i>Through individual projects, some students may choose to investigate issues of diversity; however, course content is not designed specifically to address issues of diversity.</i>
CSUSM 2: Exposure to and critical thinking about the interrelatedness of peoples in local, national, and global contexts.	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please describe): <i>Because the course examines spatial data at different temporal and spatial scales, students will be exploring and critically thinking about how people are interrelated at local, national and global scales.</i>

**Part D: Course requirements to be met by the instructor.**

<b>Course Requirements:</b>	<b>How will this requirement be met by the instructor?</b>
Course meets the All-University Writing requirement: A minimum of 2500 words of writing shall be required for 3+ unit courses.	In this course, the All-University writing requirement is fulfilled through the combined writing requirements of weekly lab exercises, written exam questions, and the written component of the individual project.
Instructors will include an evaluation of students' written work which assesses both content and writing proficiency.	Students will receive weekly feedback on their lab exercise, which evaluate their ability to clearly articulate their methods of analysis, including data interpretation. Through their description of their analysis, students will justify their particular approach, which demonstrates their understanding of how to select an analytical approach and when it is inappropriate to use the selected approach. Their data interpretation will convey their integration of course concepts and application of those concepts in the appropriate context.
Courses will include a component requiring students to develop an understanding of the core information resources and literature of the disciplines.	As the semester progresses, students will increasingly work independently to locate data, select the appropriate analytical tools, and to interpret the results of their analysis. This may require additional reading to examine the appropriate tools for a specific question or data set, which will require the students to conduct literature and information searches that are relevant to geography, GIS, and their discipline.  Students create a larger individual project, which will require them to structure their papers according to discipline specific standards (e.g., following a journal

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	<p>format or other accepted professional reporting standard). Students will also present the outcome of their analysis during a class poster presentation session.</p>
<p>All social sciences core course proposals/syllabi shall require information literacy: This includes opportunities for students to read, evaluate and analyze social science information, and report results of their analysis clearly. Courses will be assigned a librarian as a resource person to facilitate the information literacy and library use components.</p>	<p>As the semester progresses, students will increasingly work independently to locate data, select the appropriate analytical tools, and to interpret the results of their analysis. This may require additional reading to examine the appropriate tools for a specific question or data set, which will require the students to conduct literature and information searches that are relevant to geography, GIS, and their discipline.</p> <p>Students create a larger individual project, which will require them to structure their papers according to discipline specific standards (e.g., following a journal format or other accepted professional reporting standard). Students will also present the outcome of their analysis during a class poster presentation session.</p> <p>The ability to interpret and critique maps is also a component of visual literacy.</p>