

**2009-2010 Assessment Report  
DEPARTMENT OF GEOGRAPHY  
College of Natural Sciences and Mathematics  
California State University Sacramento**

**PART I: THE ASSESSMENT PROCESS**

The primary mission of Geography Program, as identified in the self-study for its 2005 program review, is to provide students in the geography major (B.A.) with a solid undergraduate liberal arts education focused on geography. A secondary goal is to prepare majors with the knowledge and skills needed to pursue a graduate degree in geography or to obtain employment in a geography-related field. The Geography Department has been formally assessing its performance in these areas via its own internal assessment process since 2000-2001. The process has undergone continuous modification since then, most notably as part of a 2002-2003 university-wide assessment initiative undertaken by Academic Affairs under the direction of Linda Buckley, and in response to recommendations from the Department's 2005 program review. The current assessment process described below builds on these earlier efforts.

**Goals and Learning Outcomes**

The Geography Department has identified the following goals and learning objectives for students in the undergraduate Geography program:

Goals: Students completing the B.A. degree in Geography will:

1. Have an understanding of the nature of Geography as an academic discipline, including familiarity with its history and principal subfields;
2. Demonstrate (a) a knowledge of the basic concepts of physical and human geography and (b) competency in selected geographic techniques;
3. Display competency in the graphic expression of geographic/spatial data (maps, photographs, graphs, data bases);
4. Display competency in written expression with respect to clarity, logical expression, and effective argument;
5. Understand and apply the basic research skills, including the ability to (a) critically evaluate the research of others and (b) effectively design and carry out a research project on one's own;
6. Acquire knowledge and skills sufficient to allow one to pursue advanced study in geography or find employment in a geography-related field.

**Learning Outcomes:** Various learning outcomes are identified to help the student achieve the above goals. The outcomes reflect the different levels of learning set forth in Bloom's taxonomy, including basic knowledge and comprehension, application, analysis and evaluation, and synthesis. Key outcomes, along with the means for their assessment, are found in the accompanying table. Although the learning outcomes are addressed in required courses throughout the major, there are nonetheless key courses that play a central role in helping students achieve these outcomes. These are also identified in the table below.

<b>Learning Outcome</b>	<b>Relevant Course(s)</b>	<b>Means of Assessment</b>
<b>One</b> Identify and describe basic concepts and patterns in physical and human geography.	GEOG 1, GEOG 2, GEOG 11, GEOG 118 and upper-division breadth requirements	Baseline knowledge quiz
<b>Two</b> Display knowledge of the history of Geography as an academic discipline and a familiarity with its contemporary models, approaches, and theories.	GEOG 102, GEOG 190	Baseline knowledge quiz
<b>Three</b> Demonstrate competency in one or more of the basic geographic tools/techniques for data collection, display, and analysis.	GEOG 3 and the upper-division techniques courses	GEOG 190 senior project
<b>Four</b> Demonstrate graphic literacy in the use and analysis of maps, graphs, and spatial data sets.	GEOG 3, GEOG 105, GEOG 107, GEOG 109, GEOG 110, GEOG 163	Baseline knowledge quiz; GEOG 190 senior project
<b>Five</b> Show written competency in the description and analysis of geographic subject matter.	GEOG 102, GEOG 190; all upper division human, physical, and regional courses	GEOG 190 senior project
<b>Six</b> Analyze and evaluate scholarly writing within the discipline.	GEOG 102, GEOG 190	GEOG 190 senior project
<b>Seven</b> Synthesize geographic models, data, and methodologies in research design.	GEOG 190	GEOG 190 senior project
<b>Eight</b> Acquire the overall competencies necessary to success in graduate school and post-graduation careers.	The major as a whole	Graduating senior interview; periodic alumni survey

## Methods of Assessment

The Geography Department's assessment process is designed (1) to evaluate the degree to which students in the Geography B.A. program achieve the goals and outcomes above and (2) to identify potential areas for improvement. While course-level assessment of student performance takes place within the courses themselves, assessment of student performance at the programmatic level employs an additional set of assessment measures. Central to the Department's assessment process are two courses: GEOG 102 (Ideas & Skills in Geography), a gateway course taken by all students during their first fall semester in the major, and GEOG 190 (Senior Research Seminar in Geography) a capstone course, which requires the student to synthesize much of what he or she has learned as a major through design of an individualized research project. The latter course is taken during the student's final semester before graduation. Based on recommendations from the Department's last program review, these two classes have become central to the Geography assessment process.

In all, the Department employs the following five assessment measures:

1. Baseline Quiz: This instrument assesses student knowledge of basic geographic concepts and facts. It consists of approximately 40 objective questions and is brief, taking only about 20 minutes to administer. A version of it is given to students in both the gateway course (GEOG 102) and the senior seminar (GEOG 190). Its purpose is twofold: to identify the student's level of basic geographic knowledge at both the time of entering the program and at the end of his or her time in the major (thus measuring "value added"), and to identify those areas in which student knowledge is deemed deficient and corrective measures may be called for. The quiz contents are divided more or less evenly among topics in physical geography, human geography, and graphic literacy (maps and graphs). *Faculty responsible*: Prof. Krabacher
2. Senior Research Project: The central focus of the capstone course, GEOG 190 (Senior Research Seminar in Geography), is design and implementation of a research project. In doing so students have to complete the various phases of the research process (articulating the research question/hypothesis, literature review, selection of methodologies, data collection and analysis, graphical presentation, discussion of findings), and report their findings in a poster presented at a poster session. The exercise is one of synthesis, requiring the student to draw upon the broad range of skills and knowledge acquired in the major. A standardized grading rubric based on a model proposed by the Center for Teaching and Learning was employed in the evaluation for the first time in Spring 2008. *Faculty responsible*: Profs. Datel, Krabacher, and Wanket
3. Senior Seminar Reflective Evaluation: Students in the GEOG 190 senior seminar are asked to complete a questionnaire as part of the end-of-semester course evaluation. While most questions relate to the student's GEOG 190 experience, some are broader in scope, addressing such topics as: subject matter in which students felt it would have been

desirable to have had greater experience prior to taking the seminar, prior courses that were most useful to them in completing the seminar research project, etc. These responses are useful in identifying student perceptions of curriculum strengths and weaknesses. *Faculty responsible:* Profs. Datel, Krabacher, and Wanket

4. Graduating Senior Exit Interview: At the end of each semester, the department chair invites graduating seniors to participate in an unstructured conversation about their experiences in the major. This ordinarily takes place in a relaxed setting, usually over pizza and beverages in the University Union. The purpose is to assess the level of student satisfaction with the major and identify what students perceive as strengths, weaknesses, and desirable changes. *Faculty responsible:* Department Chair
5. Periodic Alumni Survey: The Office of Institutional Research conducts a survey of each program's alumni on a regular basis. Geography's next OIR-conducted survey is scheduled for 2010. These surveys assess alumni perceptions of (1) the usefulness of the major in realizing post-graduation academic and/or career goals and (2) the strengths and weaknesses of the Geography curriculum, given the perspective lent by time. Because these OIR surveys occur only every six years, the department has started to experiment with conducting its own e-mail based surveys of recent graduates. *Faculty responsible:* Department Chair

The Geography Department's assessment process has been undergoing regular modification over the past several years, and several pieces only recently have fallen into place. For example, only during the past four years has GEOG 190 been offered in the current format that requires an integrative capstone experience. In addition, the standardized grading rubric for measure #2 used in GEOG 190 was only introduced in Spring 2008. As another example, although the baseline quiz (measure #1) has been administered in GEOG 190 for several years, the Department only started to administer it in GEOG 102 in Fall 2006. Thus, the ability to examine changes over time will improve over the next few years.

## **Feedback**

Assessment is useful only to the extent that the results are used to inform curricular and programmatic planning. The primary means by which the Department incorporates assessment results into its planning is through the annual faculty retreat. Initiated in 2002, the Geography Department annual retreat is held in the week before the fall semester begins. At the retreat, broader issues concerning the program and its curriculum are discussed and needed changes or modifications identified. Assessment results inform a significant part of that discussion.

## **Assessment Cycle**

The Geography program's annual assessment activities occur over a 12-month cycle, beginning in the fall semester of a given academic year and culminating at the annual Geography

Department faculty retreat in August just prior the opening of the fall semester of the following academic year. Thus:

- Fall Semester                      Baseline quiz administered in gateway course (GEOG 102); capstone course evaluations conducted if course (GEOG 190) is offered in the fall; graduating seniors interviewed.
- Spring Semester                      Capstone course evaluations conducted; informal e-mail surveys sent to recent alumni; graduating seniors interviewed.
- August                                      Geography faculty retreat: discussion/analysis of assessment data and possible program changes identified in response; possible modifications to assessment process proposed.

For the 2009-2010 academic year, therefore, the assessment cycle began with the Fall 2009 semester and will conclude at the Geography faculty retreat on August 26, 2010.

The survey of alumni is conducted in cooperation with the Office of Institutional Research on a six-year cycle. The most recent survey was in 2004; the next is scheduled for 2010.

## **PART II: 2009-2010 ASSESSMENT OUTCOMES**

As explained above, the 2009-2010 assessment cycle will not be completed until the Geography Department faculty retreat takes place in August 2009. As a result, this section contains:

- Summary of actions taken based on discussion of 2008-2009 assessment results.
- Summary of the 2009-2010 assessment results for selected learning outcomes.
- Possible points for consideration at the August 2010 Geography Department retreat.

### **Department Response to 2008-2009 Assessment Results**

During 2008-2009 Learning Outcomes #1, #3, #4, #6, and #8 were selected for assessment. The detailed discussion of those assessment results is in last year's report. Here we report on our response to those results, which we formulated at our August 2008 retreat.

*Learning Outcome #1: Identify and describe basic concepts and patterns in physical and human geography.*

This outcome was measured using the department's "baseline quiz." During 2008-2009, the students in GEOG 190 (seniors) did better than the students in GEOG 102 (juniors) in all three categories (physical geography, human geography, mapping and graphic literacy). This was an improvement over the previous year in which the group of juniors actually outperformed the group of seniors in the physical geography area.

We discussed the quiz itself and agreed to submit new questions, each of which should concern core geographic concepts or facts, for Prof. Krabacher's consideration and use. This was subsequently done.

We reviewed the very low performance by students in both GEOG 102 and GEOG 190 on questions dealing with the following topics:

- Köppen climate classification system
- Cloud composition
- The U.S. Public Land Survey System
- Language geography
- Types of spatial diffusion

*Action taken:* faculty teaching these topics in both thematic and regional courses were alerted to the need to be sure they are adequately covered.

*Learning Outcome #3: Demonstrate competency in one or more of the basic geographic tools/techniques for data collection, display, and analysis.*

This outcome was assessed by means of the senior project in GEOG 190. The relevant senior project rubric item is "Presentation of Results (Data and Analysis)":

5 points – Data are complete, properly reported, and correctly analyzed.

4 points – Data are appropriate but some mistakes in reporting and/or analysis are evident; may be less than complete.

3 points – Data are seriously incomplete or improperly reported; major gaps and/or mistakes appear in the analysis.

Students taking 190 in Fall 2008 (n = 7) had a average score of 4.0 on the above scale, while those taking it in Spring 2009 (n = 23) had a average score of 4.4. Of these 30 students, only two received a score of 3. Even so, in the reflective questionnaire administered to GEOG 190 students at the end of the class, a total of 9 out of 23 respondents (7 from the fall section and 16 from the spring sections) expressed the wish that they had had more experience with "gathering data and presenting it in table or chart form" prior to taking 190. Only "choosing a research topic" elicited more expressions (12 out of 23) of wished-for prior experience.

*Action taken:* faculty were encouraged create course assignments across our curriculum (in regional and thematic courses as well as in our technique courses) requiring students to gather, display, and analyze data.

*Learning Outcome #4: Demonstrate graphic literacy in the use and analysis of maps, graphs, and spatial data sets.*

This outcome was assessed by means of questions on the baseline quiz, which tested the student's general knowledge of the subject matter, and the senior seminar student project in

which students are expected to apply their knowledge of maps, charts, graphs, and other graphics.

Results from the 2008-2009 quiz had students in both 102 and 190 doing better than their peers did the previous year. Very likely, quite a few of the people who took the exam as 102 students in Fall 2007 also took it as 190 students in Spring 2009, in which case the improvement in scores (on the map questions) by almost thirty percentage points is encouraging.

The rubric used to evaluate the student research projects in GEOG 190 includes an assessment of the students' ability to use maps and other graphics. On a 5-4-3-point scale, students taking 190 in Fall 2008 (n = 7) received an average of 4.4 points on this part of the rubric and those taking it in Spring 2009 (n = 23) received 4.3. These results (from different instructors) suggest that students' use of graphics is generally relevant, fairly complete, and of acceptable quality. Six out of 23 students completing the 190 reflective questionnaire in Fall 2008 and Spring 2009 expressed the wish that they had had more prior experience "making maps."

*Action taken:* despite general satisfaction with student map-related skills, the faculty, after considerable discussion, decided to change the final student product in GEOG 190 from a paper to a poster. Among the poster's pedagogical advantages is its greater demands on cartographic and other visual display and analysis skills. In addition, it prepares students to participate in poster and map competitions at scholarly meetings, formats that undergraduate students strongly prefer to traditional paper sessions.

*Learning Outcome #6: Analyze and evaluate scholarly writing within the discipline.*

This outcome was assessed by means of the senior project in GEOG 190. The relevant senior project rubric item is "Literature Review":

5 points – Relevant, thorough, organized.

4 points – Generally relevant; some extraneous material and/or key sources missed; organization needs tightening.

3 points – Merely lists studies; little or no logic to selection of sources; poorly organized.

Students taking 190 in Fall 2008 (n = 7) had a average score of 4.0 on the above scale, while those taking it in Spring 2009 (n = 23) had a average score of 4.1. Of these 30 students, only two received a score of 3 on this rubric item. In the reflective questionnaire administered to GEOG 190 students at the end of the class, only 4 out of 23 respondents (2 from the fall section and 2 from the spring sections) expressed the wish that they had had more experience with "searching for and making use of scholarly publications" prior to taking 190.

*Action taken:* faculty were encouraged to further expose students to scholarly literature, via the use of research articles as assigned readings and the requirement that students find and use research articles in their homework assignments, including term papers. Prof. Krabacher committed to developing an assignment in GEOG 102 in which students analyze and evaluate a piece of research reported in a scholarly geography article. He has done so.

*Learning Outcome #8: Acquire the overall competencies necessary to success in post-graduate education (graduate school, et al.) and careers.*

Assessment of this learning outcome was based on informal interviews with graduating seniors, who were generally highly satisfied with their geography education at Sacramento State. Most suggestions made by students in those interviews (or in a brief e-mail survey of alumni) called for program enhancements that would involve additional resources that have been unavailable to the department and the college: more faculty, more technical staff, more space.

*Action taken:* We plan to revisit the suggestion, supported by several students, of mandatory annual advising. We have responded to a comment recommending that we improve the dissemination of internship information, and since January 2010, Prof. Gervais has been active in posting relevant internship and job opportunities on our department website.

We mentioned in last year's discussion that we would have more information with respect to this outcome based on a 2008-2009 alumni survey, but we learned from Jing Wang, Director of the Office of Institutional Research, that our turn for such a survey does not actually come up until the summer of 2010.

### **2009-2010 Assessment Results**

During 2009-2010 Learning Outcomes #1, #2, #5, #7, and #8 were selected for assessment.

*Learning Outcome #1: Identify and describe basic concepts and patterns in physical and human geography.*

This outcome was assessed by means of the baseline quiz, which was administered to entering majors in Fall 2009 in GEOG 102 and students completing the major in GEOG 190 during 2009-2010. Quizzes averaged 40 questions in length; questions were divided approximately evenly among the three broad categories of physical geography, human geography, and mapping and graphic literacy. Overall results are shown in the accompanying tables; the previous two years' results are shown for purposes of comparison, although it is important to keep in mind that some questions were different among the three quizzes.

#### **QUIZ RESULTS for 2009-2010**

Course	Physical Geog.	Human Geog	Mapping	Total
GEOG 102	54.6	50.4	44.5	49.8
GEOG 190	58.1	53.3	67.8	59.7

Numbers = overall percentage of questions answered correctly

n = 41 for 102 (F 2009)

n = 29 for 190 (F2009 & S2010)

**QUIZ RESULTS for 2008-2009**

Course	Physical Geog.	Human Geog	Mapping	Total
GEOG 102	55.6	52.3	47.6	51.8
GEOG 190	66.2	58.3	66.5	63.6

Numbers = overall percentage of questions answered correctly  
 n = 35 for 102 (F 2008)  
 n = 19 for 190 (S 2009)

**QUIZ RESULTS for 2007-2008**

Course	Physical Geog.	Human Geog	Mapping	Total
GEOG 102	64.0	54.2	37.6	53.1
GEOG 190	57.1	59.0	52.7	56.7

Numbers = overall percentage of questions answered correctly

Regarding the seemingly low percentages of correct answers: while not optimal, this result is not entirely unexpected. While one can always hope, it is not likely that a student will have been exposed to all topics in our discipline, which traverses physical science, social science, and humanities. Nonetheless, *all* students should have encountered *some* of the subject matter being tested. What is important, therefore, are the relative performances among categories and anomalous high or low results for specific questions/topics.

In 2009-2010, GEOG 190 students did better than GEOG 102 students in all three categories. As in previous years, the biggest improvement in scores between 102 and 190 occurs in the category of mapping and graphic analysis.

Insofar as performance in particular subject matter areas is concerned, students did poorly on questions dealing with the following:

- Köppen climate classification system
- Cloud composition
- Greenhouse gases
- Language geography
- Types of spatial diffusion
- The age of Civilization
- Terms for economic sectors
- Post-war philosophies of human geography (see below regarding this set of questions)

*Learning Outcome #2: Display knowledge of the history of Geography as an academic discipline and a familiarity with its contemporary models, approaches, and theories.*

This year we added five questions to the baseline quiz this year that asked students about some of the main philosophies of human geography that have emerged since World War II. We expected performance on these questions to be quite poor in 102, since this is not a subject that is given much attention in introductory human geography. These expectations were met. Unfortunately, the 190 students also did poorly on these questions, in part because the students taking 190 from a physical geographer had studied the history of contemporary *physical* geography. If we want to continue using the baseline quiz to assess this learning outcome, we will need separate sets of “history of contemporary human geography” and “history of

contemporary physical geography” questions. It may make more sense to use the relevant midterm exams in GEOG 102 and GEOG 190 for these assessments.

*Learning Outcome #5: Shows written competency in the description and analysis of geographic subject matter.*

This outcome is assessed in GEOG 190, which also satisfies the intensive writing graduation requirement. As required of all courses meeting the intensive writing requirement, evaluation and feedback on student writing occurs repeatedly throughout the semester. The grading rubric used to evaluate student projects in the seminar employs the following scoring scale in evaluation of writing:

- 5 – Few if any mechanical writing or formatting errors; writing is clear and well-organized; logic or arguments presented is unassailable.
- 4 – Minor mechanical or formatting errors; writing is competent but has some problems with clarity and organization; has some minor weaknesses.
- 3 – Serious mechanical writing or formatting errors; writing is unclear and poorly organized; logic has serious flaws.

The average student scores were 4.5, 4.5, and 4.8 in the three sections of GEOG 190, with only two students out of 35 receiving a score of 3. This suggests that students, in general, are performing satisfactorily in this area.

*Learning Outcome #7: Synthesize geographic models, data, and methodologies in research design.*

This learning outcome basically re-states the principal purpose of the GEOG 190 senior seminar, which is to provide graduating seniors with a capstone experience in which they can synthesize their previously acquired geographic skills and knowledge in a semester-long project. Student performance is evaluated using a rubric that rates the project on seven separate elements according to a 5-4-3 scoring scale; the example for Overall Written Expression is shown in the discussion of outcome #5 above. The elements and average scores earned on them by the three sections of GEOG 190 taught during 2009-2010, as well as the total number of students who received a low score (“3”) for each element, follow:

Element	Class Score F2009	Class Score S2010 - 1	Class Score S2010 - 2	# of Students (n = 35) earning a “3”
Statement of Research questions or Hypotheses	4.5	4.5	4.4	3
Literature Review	3.8	4.3	4.0	9
Methodology Choice and Description	4.2	4.5	4.0	4
Presentation of Results (Data and Analysis)	4.3	4.2	4.0	6
Graphics	4.5	4.6	4.5	1
Discussion of Findings	4.0	4.3	4.1	6
Overall Written Expression	4.5	4.8	4.5	2
TOTAL SCORE (out of 35 possible)	29.8	31.2	29.4	

This table suggests that the most challenging areas for this group of students were the literature review, the presentation and analysis of data, and the discussion of findings. Reflections on the course collected in two of the sections did reveal that many students felt they struggled with identifying an appropriate research question, and course instructors felt likewise. Still, average project scores equated to a “B” grade.

*Learning Outcome #8: Acquire the overall competencies necessary to success in post-graduate education (graduate school, et al.) and careers.*

This learning outcome is assessed via graduating senior exit interviews and alumni questionnaires. No questionnaires were sent to alumni by the department this year, as later this summer, they will be receiving a survey from OIR as part of Geography’s upcoming Self Study and Program Review. Graduating seniors are invited to participate in a group conversation in a relaxed setting (the Hive in the University Union). Although students were interviewed in both December and May, the following details pertain to the ten students interviewed in May only.

Aspects of the geography program that were praised by this group of graduating seniors:

- Interaction with the professors, who are accessible and supportive
- Small classes that provide many opportunities for students to speak
- Quality course content, relevant projects, no meaningless work
- Field work opportunities
- Highly knowledgeable and passionate faculty
- Dedicated fellow students
- Support for undergraduate research (in addition to senior projects, one student had a SURE award and another was hired to work in the department’s Paleoecology Lab)
- Support for Education Abroad
- Internships (in this group, students had interned at the Forest Service, Department of Water Resources, State Parks, the Integrated Waste Management Board, and Cal Fire).

Things they would like to see improved or added:

- Spruced up physical space in Amador Hall
- More opportunities to work with research/lab equipment
- Some classes offered on a more frequent basis
- Reduction of overlap in the physical geography classes
- A speaker series

Post-graduation plans

- Grad school: one student has been accepted; several others have specific plans; several others have vague plans
- Teaching: one will be teaching English abroad; another is considering the credential program for high school history and geography
- Military service: one Naval Reservist has been called up to serve in Afghanistan (she served in Iraq and Somalia when in the Navy); another student is hoping to join the National Guard (and meanwhile will be working as a guide/photographer in Yosemite)

- Employment: two students have GIS Analyst jobs with the State of CA

#### Previous majors

- This group was asked to identify their majors prior to geography. The answers were business (3), liberal studies (2), civil engineering, criminal justices, English, environmental studies, history (1 each). They virtually all discovered geography by taking a geography GE course or a geography course that was an elective or requirement in a previous major. This reality suggests the importance of our GE and service courses as recruiting grounds for our major.

Generally speaking, student perceptions held that the program was providing them with the skills and knowledge needed to be successful in their post-graduation careers.

#### **Feedback/Anticipated Actions**

We will discuss the 2009-2010 assessment results contained in this report and take appropriate actions at our annual retreat in August 2010. Possible discussion and action items include:

- 1. Review the baseline quiz in concept and with respect to particular content.* Discuss overall scores and scores on particular questions. Possibly implement a system whereby we track the changes in scores of individual students, not just cohorts.
- 2. Work with those on campus who are developing common tools for assessment in intensive writing courses.* Our senior capstone seminar assesses a variety of geography learning outcomes, and it also serves as the Writing Intensive course for geography majors. We want to take advantage of the efforts being made across campus to ensure that our WI course meets campus expectations and benefits from best practices.
- 3. Discuss where in our curriculum the disciplinary history of geography should be taught and how it should be assessed.* Should we continue to divide it between 102 and 190? Should we shift all the history to 102 and instead use the lecture time in 190 to focus more directly on research skills? Should we assess student knowledge of the history of geography via the baseline quiz or by some other means?
- 4. Discussion of how we might gather data efficiently on some other measures of the success of our program.* We don't currently collect in a systematic way data on our students' geography-related internships, jobs, scholarships, research or community service activities and awards, presentations at scholarly meetings, attendance at scholarly meetings, and acceptances to graduate school. We had this item on our list last year, but didn't really get to it. Since we will be collecting at least some of this information for our Self Study this year, we will have a good opportunity to put in place some infrastructure for sustained data collection.