FORM 201B: ASSESSMENT PLAN (Updated June 2014)

Program/Department: <u>GIS Graduate Certificate / GSHAA</u>

Program Mission

Each program in CSU's Department of Geography, Sociology, History, African American Studies, and Anthropology serves the State of Illinois and metropolitan Chicago through accessible, quality instruction employing pertinent scholarly and technological methods; and through scholarship and practice in the interacting arenas of the environment, the economy, and the community. The primary objective of the program is to prepare its majors for the job market and for graduate studies through quality teaching and mentoring. The Department serves other programs in the University through quality teaching and through provision of GIS facilities and regional information. The Department serves the community through the Fredrick Blum Neighborhood Assistance Center and its Calumet Environmental Resource Center. The Department strives to be a national leader in the training of minority and women scholars in each of its constituent disciplines.

Program Effectiveness Objectives (PEOs)

1. Prepare students for professional careers and graduate and further graduate studies.
2. Provide quality general education instruction in Geography/Geographic Information Science, Sociology, History, African American Studies, and Anthropology.
3. Support other programs in the University through program minors in Geography, Sociology, African American Studies, Anthropology, and Environmental Studies.
4. Provide state-of-the-art technology and service in the CSU Geographic Information Systems laboratory.
5. Provide exemplary community outreach through the Fredrick Blum Neighborhood Assistance Center and the Calumet Environmental Resource Center.
6. Continue to position the Department as a nationally recognized center for providing training in Geography, Geographic Information Science, Sociology, History, African American Studies, and Anthropology, especially for women and minorities.
7. Provide a firm, collegial and supportive base in which faculty can continue their excellent teaching, research, and practice.

Student Learning Outcomes (SLOs)

Upon completion of the Certificate program in Geographic Information Systems (GIS) students should be able to:
   a. Explain earth-map relationship and distortions on map projections;
   b. Process analog and digital remote-sensing imagery to prepare imagery for analysis;
   c. Analyze analog and digital remote-sensing imagery to extract/create new information;
   d. Create spatial databases consisting of raster and/or vector data models for GIS analysis and modeling;
   e. Use analytical capabilities of ArcGIS, ArcGIS Extensions, and ERDAS IMAGINE in spatial analysis and modeling;
   f. Design and implement a major/semester-long GIS project to address a significant research question(s);
   g. Design a Web map that allows viewers to display and query the layers on the map;
   h. Organize information into a coherent written and oral presentation.

PEOs	SLOs	Assessment Instruments	Criteria*
1, 4, 6	a. a	a. Pretest/Post-test	a. $\geq 80\%$
1, 4, 6	b. a through h	b. Capstone Project	b. B or better
1, 4, 6	c. a through h	c. Student-Self Assessment	c. Satisfactory
1, 4, 6	d. a through h	d. Intern-Employer Survey	d. Satisfactory
1, 4, 6	e. a through h	e. Alumni Survey	e. Satisfactory
1, 4, 6	f. a through h	f. Alumni-Employer Survey	f. Satisfactory

*See the following pages for description of assessment instruments and criteria/grading rubrics.

DESCRIPTION OF ASSESSMENT INSTRUMENTS AND
GRADING RUBRICS
FOR
THE GRADUATE CERIFICACATE IN GIS

1. **Pretest/Post-test:**

Geog 5800 (Introduction to GIS) or an equivalent course or background is a prerequisite for Geog 5830, Advanced GIS. The pretest/post-test is administered to students of 5830 in the first week of the semester to assess basic GIS concepts and skills taught in the prerequisite course to determine their preparedness for the advanced level course. The results of the pretest are very useful for determining student strengths and weaknesses and for making some adjustments in the presentation of the material in the advanced level course. The same test is administered as a post-test toward the end of the semester to assess mastery of the same basic concepts and skills by students as a result of revisiting the concepts and skills in the advanced level course. An average score of 80% or better (i.e. B or better) in the post-test is considered a satisfactory performance.

2. **Project Portfolio & Poster:**

Geog 5850, GIS Application, the capstone course for the Graduate Certificate in Geographic Information Systems involves the development and implementation of a major GIS project. A project portfolio and a poster approved by the instructor of the course must be submitted for a successful completion of the capstone course and the Graduate Certificate in GIS.

Project Portfolio: The project portfolio should have seven parts as shown below:
a. Brief discussion of the project identification/development/planning phase of the project and statement of the problem.
b. Brief discussion of data acquisition and data preprocessing (i.e., preparation of data for analysis, for example, projection and re-projection of geographic data, editing of geographic and attribute data, data standardization, etc.).
c. Discussion of GIS data analysis operations and flow chart of operations; flow char is desirable but not required.
d. Detailed analysis of results and final products (maps, charts, etc.).
e. Brief discussion of major problems encountered in the planning/development and implementation phases of the project and solutions to the problems.
f. Brief discussion of lessons learned and experience gained in the project development/planning and implementation phases of the project.

Poster: In addition to the project portfolio, each student must produce a presentation quality poster that briefly explains the entire project independent of the project portfolio.

Grading rubric:

> **Grade of A:** Students at the A level develop and implement a major GIS project that demonstrates their GIS skills and compile a project portfolio and a poster that clearly articulates the GIS project. The GIS project, the portfolio, and the poster are considered to be of **superior** or **excellent** quality.

> **Grade of B:** Students at the B level develop and implement a major GIS project that demonstrates their GIS skills and compile presentation quality poster, but their project portfolio may be deficient in one or two of the above listed items. The GIS project, the portfolio, and the poster are considered to be of **good** quality.

Grade of C: Students at the C level develop and implement a major GIS project that demonstrates their GIS skills, but their project portfolio may be deficient in three or more of the above listed items and their poster may have some deficiencies. The portfolio and the poster are considered to be of unsatisfactory. Students will be required to improve both the project portfolio and poster to attain at least a B level.

3. **Student Self-Assessment:**

The student self-assessment instrument is administered annually to students who are in the program for at least one academic year. The instrument consists of open-ended questions and closed-ended Likert-style student survey questions adapted from *Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning*. Boston: Allyn & Bacon, 2002. In the open-ended questions, students are asked to state what they have learned in the last one year and their opinion about their program and the progress they are making toward the completion of their program. In the closed-ended Likert-style questions, students are asked to evaluate their level of agreement about their educational experience at Chicago State University on a three ordered response levels (Some, Much, Most). Although some of the questions in this test instrument are open-ended, a judgment is made by the assessment coordinator whether responses by a particular student would indicate *satisfaction* or *dissatisfaction*. If responses to the questions by the majority of the self-assessing students indicate *satisfaction,* the program gets a *satisfactory* grade. If responses to the questions by the majority of the self-assessing students indicate *dissatisfaction*, the program gets *unsatisfactory* grade.

4. **Intern-Employer Survey, Alumni Survey, and Alumni-Employer Survey Assessment Criteria/Rubric:**

One or more these surveys are conducted occasionally. Intern supervisors, alumni, and alumni employers are asked a series of questions to rate performance of interns, the CSU GIS program, and performance of alumni respectively on a scale of 5 to 1 (5 = Excellent, 3 = Satisfactory, and 1 = Unsatisfactory). An average score of 3 or better on each survey is considered Satisfactory. An average score less than 3 is considered Unsatisfactory. Question-by-question analysis of survey responses are used to identify areas of strengths and weaknesses to improve curriculum.