

I. Description of UC Berkeley Graduate Academic Unit Certificate Program (Option 2)

A. Certificate Program Name: Graduate Certificate in Geographic Information Science and Technology

Proposed by:

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B. Description: Purpose and Distinctive Features

The Option 2 Graduate Certificate in Geographic Information Science and Technology (GIST) provides an academic structure for an interdisciplinary exchange of ideas around geospatial information and analysis. Geographic information science and technology, along with geostatistics and analysis of satellite imagery, have emerged as major cross-disciplinary tools used in academic research, industrial applications, and public policy analysis. The Graduate Certificate in Geographic Information Science and Technology enables specialized, multi-disciplinary training and research opportunities in various emerging areas of geospatial information science and technology. Currently no academic program is offering this kind of a certificate or even a within-degree concentration.

Certificate students will not only participate in a cutting-edge program and receive explicit recognition of specialization in GIST by virtue of the Graduate Certificate but will be well positioned to compete for the most desirable jobs in geospatial technology, both in academia and in industry. Such jobs are growing rapidly in number, especially given the popularity and rapid development of location based mobile services. The U.S. Department of Labor (DOL) notes that the “Increasing demand for readily available, consistent, accurate, complete and current geographic information and the widespread availability and use of advanced technologies offer great job opportunities for people with many different talents and educational backgrounds.” The DOL website (http://www.doleta.gov/BRG/Indprof/geospatial_profile.cfm) also sites data from the Geospatial Information & Technology Association indicating that the “market is growing at an annual rate of 35 percent, with the commercial subsection of the market expanding at the rate of 100 percent each year.” There are concerns from the industry that the rate of industry growth is far outpacing the generation and development of a competent labor force for the GIS industry).

C. Calendar

Courses that comprise the program are offered regularly and students should be able to complete the Graduate Certificate over the course of 3 semesters.

D. Student Participants

Based upon the level of inquiry via the GIS @ Berkeley website, GIS events and the growth of the GIS minor, we expect that the program will attract between 10-12 students within the first 2-3 years, but build steadily up to approximately 15-20. We expect to draw

students primarily from CED (LAEP & DCRP), CNR (ESPM, ARE), Geography, and Public Health (Environmental Health)

E. Certificate Curriculum: Requirements

Regular Courses: Graduate students are required to take at least three courses, or a total of 90 hours of instruction, and earn a minimum grade of B. Students will select courses from the list below; 2 of the 3 courses should be taken outside of their home department:

Geographic Information Systems

- ESPM 233 (GIS for Environmental Science)
- GEOG 282 (GIS Applications)
- CRP 204 (Introduction to GIS and Planning)
- CRP 255 (Planning Applications and GIS)
- PUBH 272 (GIS in Public Health)
- PUBH 274 (GIS and Remote Sensing in Public Health)

Remote Sensing

- ESPM 271 (Advanced Remote Sensing)
- ESPM 290 (Applications in Remote Sensing)

Spatial Analysis & Geostatistics

- ESPM 210 (Spatial Data Analysis)
- LAEP 221 (Quantitative Methods in Environmental Planning)
- PUBH 252 (Epidemiological Analysis) (letter of support is under Appendix A)

The Graduate GIST Roundtable: Graduate students are also required to take a 2-unit Graduate GIST Roundtable for two semesters. This Roundtable will serve as an integrative mechanism to synthesize understanding gained from coursework, promote cross-disciplinary discussion of GIST research and applications, encourage collaborative practice, and create a GIS community on campus. Speakers would include faculty and advanced graduate students presenting their work, as well as regular visiting researchers from other institutions. The Graduate GIST Roundtable would be hosted alternately by the CNR's Geospatial Innovation Facility (GIF), the Center for Global Metropolitan Studies (based in CED/Institute of Urban & Regional Development), and the Department of Geography. A schedule for fall 2013 is under Appendix B.

Optional Workshops: Graduate students are encouraged to take at least two Geographic Innovation Facility workshops from the list provided in Appendix C.

The program will be hosted by the Department of City and Regional and governed jointly by the deans of the College of Environmental Design, College of Natural Resources, and College of Letters and Science, Division of Social Science. An oversight committee (GIST Committee) consisting of faculty from CED, Geography, ESPM and Public Health (one representative from each unit) will meet once each semester to regularly review curriculum offerings and feedback from students.

F. Review Process

Graduate Certificates in GIST (as well as graduate degrees in this subject) are not accredited by a professional accrediting body. Instead, a cross-unit faculty committee was established by Deans Wolch (CED), Gilless (CNR), and Hesse (Social Sciences), charged with the development of both undergraduate and graduate programs in geographic information science and technology. This GIST Committee approved the Graduate Certificate Proposal, which then was reviewed and approved by the executive committees in each of the three academic units.

II. Admission Criteria

A. Basic Required Criteria

Applicants must be registered and enrolled in a graduate degree program at UC Berkeley. All applicants in good academic standing (e.g., GPA of 3.0 or better) will be admitted.

III. Program Resources

A. Faculty

The certificate is a result of the set of existing courses completed by the student. Hence there is no need for any additional or dedicated faculty to teach the courses included in the GIST Graduate Certificate program. Also, the certificate will not cause additional workload or other burden for any of the Berkeley faculty teaching the program.

B. Space

The certificate program will not require any additional classroom space.

C. Administrative Staff

A GSAO in the Department of City & Regional Planning will handle the modest administrative and advising duties associated with the program. This will fall in line with current responsibilities in handling concurrent, designated emphases, and other certificate programs.

D. Additional resources

The GC program will require modest resources, primarily to cover the costs of speakers and refreshments at the monthly Graduate GIST Roundtable. These will be provided by, and divided evenly, among the College of Natural Resources, College of Environmental Design, and Division of Social Sciences.

IV. Certificate Award and Student Transcript

A. Statement of Responsibility

The Department of City & Regional Planning will be responsible for verifying fulfillment of certificate requirements, and will also issue the GIST Graduate Certificate. For transcript

posting, this same department will be the designated unit with administrative authority to provide to the Registrar (Academic Records) the names of the students who complete all requirements for the GIST Graduate Certificate program.

1. Sample Certificate Text

Students completing the Graduate Certificate in Geographic Information Science and Technology will receive a hard copy certificate (Appendix D) with the following certificate nomenclature:

“The College of Natural Resources, College of Environmental Design, and College of Letters and Science, Division of Social Sciences, University of California, Berkeley, Graduate Certificate in Geographic Information Science and Technology.”

B. Administrative Authority for Transcript

The certificate will be signed by the deans of CNR, CED, and Social Sciences, but will not bear the signatures of the Dean of the Graduate Division, the Chancellor, or the President. The University of California seal will not appear on the GIST Graduate Certificate.