

Unit Plan for Assessing and Improving Student Learning in Degree Programs

Unit: **Department of Geography**

Unit Head approval: Prof. Bruce Rhoads

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SECTION 1: PAST ASSESSMENT RESULTS

A post-graduation survey has been administered to assess the performance of the undergraduate and graduate degree programs. Overall, the graduate students are very satisfied with their graduate education. They feel that their degree is strongly connected to their subsequent careers. They are also very happy with their careers. The undergraduates are also satisfied, although not as much. A significant number of undergraduates went on to do Master's degrees across a wide range of disciplines.

The graduates also report that the department is generally successful in meeting its specific education goals (as described in the 1999 Outcome Assessment Plan). Students consistently cited GIS as an important area, although early graduates (2000, 2001) complained of too few GIS courses. Students who graduated shortly after the OAP asked for "More GIS courses. There was only one offered when I was at UIUC" (1999 graduate), and "Additional advanced GIS analysis with programming" (2002 graduate), while later students acknowledged the importance of the education that they had received in this field "I was exposed to GIS, which prompted me to further study in the field after UIUC and to eventually make a career change." and noted that they have found employment in the field (with job titles of "GIS Manager" and "Senior GIS Analyst").

In the survey conducted in Spring Semester of 2008, most respondents reported being "very satisfied" with their UIUC GIS education.

This improvement is the result of the department performing an outcome assessment of students needs. In response to student feedback, the department has focused on greatly expanding course breadth in Geographic Information Science. In 2000, the time of the last Outcome Assessment Plan, only one GIS or Remote Sensing class was offered. Presently GEOG 379 (Introduction to GIS), GEOG 439 (Health Applications of GIS), GEOG 460 (Interpretation and Analysis of Aerial Photography), GEOG 476 (Applied GIS to Environmental Studies), GEOG 477 (Introduction to Remote Sensing), GEOG 478 (Techniques of Remote Sensing), GEOG 479 (Advanced Geography Information Systems), and GEOG 489 (Programming for GIS) are offered. This trend is planned to continue. Future course include an introductory "Digital Earth" (100-level) and a theory based "Principles of GIS" (400-level).

Students may now specialize in GIS; at the undergraduate level there is now a "GIS option", and graduate students can specialize in "Geographic Information Science".

Other, smaller changes have also been made to the curriculum. A Geography Minor is now available. In response to student feedback, the graduate requirements have been made more flexible. Instead of requiring an advanced statistics course of all students, MS students must now take a techniques course suited to their field, and PhD students now take two such technique classes. With the new School (“Earth, Society and Environment”) system, redundant classes (Climatology) and major options (Environmental Geography) have been phased out.

SECTION 2: REVISED ASSESSMENT PLAN

(a) PROCESS:

This unit plan is a revised version of the previous, 1999, unit plan. In revising the plan, Dr. Jonathan Tomkin (Associate Director of Academic Affairs) consulted with the head of Geography, Dr. Bruce Rhoads, and Geography’s Admission and Records Officer, Chris Wilcox.

(b) STUDENT OUTCOMES:

Objectives:

- 1) To provide the departmental faculty with an opportunity to define, collectively, the nature of geography as an academic discipline. This exercise is the necessary preparatory one to item 2).
- 2) To provide the departmental faculty with an opportunity to identify, collectively, the objectives and expectations it has of those seeking undergraduate and graduate degrees from the department. These objectives will reflect the faculty's definition of geography outlined in 1), and its view of appropriate training expressed both in terms of coursework and expectations beyond the classroom.
- 3) To establish a mechanism by which students graduating from the department can express their opinion concerning the extent to which their training met the goals established by the department and their own expectations.
- 4) To establish a mechanism by which the student opinions solicited can be brought before the faculty systematically so the faculty may regularly assess them. The purpose of such assessments being to evaluate the extent to which department is meeting its own student training expectations, and to consider any programmatic adjustments that seem appropriate in the light of student input.

The Nature of Geography

Geographers view the world from a distinctive set of locational and/or place-oriented viewpoints. Human geographers emphasize the spatial organization of the built

environment as human habitat formed by and influencing human society. Physical geographers emphasize physical processes that explain the natural environment and the interaction between these processes and human activities.

Geographers are concerned with the causes and consequences of the location of economic, social, cultural, and physical phenomena, including resource use and physical geography; patterns and processes of regional growth and decline; locational behavior and locational decision making; cartography, geographic information systems, and remote sensing; research method, and settlement and settlement systems. Central to the discipline is basic research on explanatory process, and on the causes and consequences of interactions among places and regions and interrelationships between human activities and the natural environment.

As a scientific discipline, geography has traditionally dealt with both social and physical (or natural) systems, although this separation has become essentially arbitrary. Today, many geographers bridge the social and physical sciences by focusing directly upon human impacts on the environment. Geographical research also spans political boundaries, focusing on human environmental interactions in foreign settings at local, regional, and global scales.

Because geography is defined largely by perspective rather than by topic, geographers commonly interact with colleagues in cognate disciplines and international studies programs. They contribute to these collaborative efforts a holistic, spatially-integrated view of the form, function, and interactions of physical and human systems. Although some research about spatial processes and patterns is conducted outside the field (by its very nature geography reaches out to cognate disciplines exciting interest there), departments of geography are invariably the principal unit in a university teaching and researching the relationships among people, places, and the environment.

In recent decades, geography has been substantially influenced by 'globalization' as it relates to integration of world economic, environmental, and social concerns. Human and physical geographical research explores the relationships, reshaping the global nexus at multiple scales and time frames. Social theory and diverse methodologies inform our explorations of social practices, spatial patterns, and nature-society relations. Simultaneously, three important interrelated methodological and technological developments have guided research, and modified teaching curricula, in the discipline; these are:

Use of sophisticated, theory-based and often mathematically-based analytical procedures, especially deductive modeling techniques.

Enhancement of measurement technologies including remote sensing and global positioning systems which have rapidly expanded the quantity and types of spatially referenced data about the human habitat and the physical environment.

Development of computer-based Geographical Information Systems (GIS) to ingest, manage, and analyze this plethora of spatially referenced data, to discern spatial processes and patterns, and to display the result of such analyses through computer assisted images and maps.

Undergraduate Majors

Students pursuing a major in geography must opt for one of the following four options:

General Geography, Human Geography, Physical Geography, or Geographic Information Science. All students, regardless of option (or program) selected, must take 15 or 16 hours of credit from the department's core courses, and are strongly urged to include Geography 379 (Introduction to Geographic Information Systems).

The geography core courses are designed to give students an appropriate introduction at the university level to a selection of the basic thematic topics that concern the majority of modern academic geographers (e.g., the geography of development, social and cultural geography, weather and climate, globalization, soils, vegetation, and landform development). Given the widely recognized subdivision of geography into human and physical specializations, the selection from the core forces the incoming student to experience at least some aspects from both sides of the discipline. Furthermore, the core and recommended techniques courses require undergraduate majors to develop some familiarity with the qualitative, quantitative and GIS techniques that underpin the methodological approaches of many professional geographers.

The notion of a fundamental familiarity with the breadth of modern geography and the research techniques employed that is fostered by the core courses is matched by an opportunity for the undergraduate student to develop greater depth of knowledge in a particular portion of geography. The four options available to undergraduates take cognizance of modern academic geography and the limitations of disciplinary coverage placed on the department by faculty size. Many students seeking a liberal arts education wish to pursue geography at large (*General Geography*). Others, with particular jobs or graduate school in mind, prefer to opt for one of the two major divisions in academic geography (*Human or Physical Geography*). Geographic Information Science is an option that provides specific training for undergraduates in the methods and techniques for managing and analyzing geospatial information.

The department attempts to foster professional undergraduate education outside the classroom in a number of ways. The leading formal undertaking is by faculty-led sponsorship of a chapter of the national geography fraternity *Gamma Theta Epsilon (GTE)*. This group undertakes a broad array of professional and social activities incorporating regular luncheon meetings with and without guest speakers, field trips of many different kinds, and sponsorship of the campus effort to support National Geography Awareness Week. While strictly a coursework undertaking, the department's field offerings provide much more than a strict addition to credit hours; such courses have been conducted throughout much of the southern United States as well as central and

southern America in recent years. These trips provide many students with 'lifetime' experiences.

In summary the faculty aspires to expose undergraduate majors to a broad selection of modern geographic themes and techniques, while simultaneously fostering analytical thought, and clear oral and textual exposition using academic geography as the medium. The faculty recognizes that geographic techniques such as GIS lead directly to opportunities in the working world.

Graduate Students

By admitting a student to the department's graduate program, the faculty indicates that it believes that an individual has an adequate background in geography, or other relevant discipline, to pursue either masters or doctoral work in geography. When admission incorporates remedial requirements, the faculty intends to indicate that the required coursework or other steps reflect inadequate preparation on the part of the student to pursue graduate work and that the remedial work must be completed successfully as specified.

The founding concept of the department's graduate program is that students entering it wish to be prepared to pursue careers as professional geographers. Consequently, the standards that the faculty members apply are consistent with the prevailing standards in geography at research institutions of the first order. While the masters and doctoral programs are separate, masters students should appreciate that the faculty has the goal of seeing all masters students terminate their degree program as acceptable candidates for the doctoral program. A determination of whether a masters student has actually met that standard is a required part of the final examination of masters students. This judgement is separate from, and in addition to, the decision to award a masters degree. Masters students who are judged to have produced an acceptable masters degree, but have failed to exhibit appropriate achievements to permit entry into the department's doctoral program may be terminated.

Given limited faculty size and a desire to pursue high standards, the department accepts students into three areas of geography identified as its Graduate Programs; these are: *Geographic Information Science; River, Watershed and Landscape Dynamics;* and *Society, Space, and Environment*. Graduate Students should recognize that pursuit of a degree within the department is heavily dependent upon their research interests matching those of the department's programs and the individual interests of at least one faculty member.

While coursework training is an important foundational element of graduate training, the department requires much more of its graduate students than successful completion of coursework. Foremost among the additional requirements is an ability to formulate, independently, a research agenda that both recognizes and resonates with the forefront of professional, academic, geographical research in the area selected by the student, and then to execute the same agenda using appropriate methodologies and techniques.

Production of high quality research that is conceptually sound, and technically robust is the touchstone of successful graduate training. As such this forms the essential standard upon which the evaluation of research papers, theses and dissertations is founded.

The faculty expects graduate students to exhibit strong analytical skills, as well as strength in textual and oral presentation. One important way in which integration of these attributes is both learned and demonstrated is in classroom teaching. While there is no formal examination in teaching, the faculty does regard mastery of teaching skills as an integral part of graduate training.

In addition to taking class work, producing research, and teaching, a professional academic is required to perform many other related tasks. Among the more obvious are: oral presentations at meetings, publication of research papers, and adherence to appropriate academic and ethical standards. The faculty expects to imbue its graduate students with appropriate training in these areas not only by conventional supervision but also by joint endeavors.

Students entering the department's graduate program should expect to be held to the standards outlined; concomitantly they are entitled to expect the faculty to provide adequate opportunity for fulfillment of these expectations. Inspection of the '*Guiding Standards for Faculty Supervision of Graduate Students*' provides a sound review of the standards and expectations that the department's faculty expects to meet.

(c) MEASURES AND METHODS USED TO MEASURE OUTCOMES:

The department proposes to assess its success in attaining its stated teaching and training goals by using a series of customized survey instruments. It is intended that each instrument be Web-based.

1) *An Undergraduate Exit Survey*. Administered to graduating majors at the time of graduation. This instrument will be used to determine student satisfaction with geography training vis-A-vis expectations and stated department goals, the student's 'geography experience' with that of UIUC in general, immediate career plans, the ease or difficulty with which employment was found.

2) *A Three-Year Post-graduation Survey for Undergraduates*. The assumption underpinning this survey is that the student is likely to be in a stable career position at this time. In addition, it is assumed that thereafter it will become increasingly difficult to maintain a representative cohort sample.

3) *A Graduate Exit Survey* Administered to graduating masters and doctoral students at the time of graduation. This instrument will be used to determine: student satisfaction with geography training, the nature of the 'geography experience' with that of LJIUC in

general, identify immediate career plans, ease or difficulty with which employment was found. A small 'Inducement' will be offered to those completing this instrument.

4) *A Three-Year Post-graduation Survey for Graduate Students.* The assumption underpinning this survey is that the student is likely to be in a stable career position at this time.

SECTION 3 : PLANS FOR USING RESULTS

(a) PLANS:

The Department proposes to use the services of CTE in instrument development and maintenance. Materials collected by CTE will be delivered annually to the department for further compilation and analysis. The department will add the new record keeping tasks to those already undertaken by the secretary presently maintaining both the existing undergraduate records, and graduate records.

The department proposes to make the new record keeping tasks the foundation of expanding its present alumni records. The department already distributes an alumni newsletter to graduates of the graduate program and circulation will be expanded to include future bachelor degree students. Departmental fund raising has been successful in the past and it is hoped that better communication with alumni of all categories will ultimately improve fund raising even further.

The Head of Department and the Graduate Advisor will conduct an annual review of the survey results with the office staff. Substantive matters stemming from these discussions will be brought to the Advisory Committee on an annual basis. The department already conducts an annual faculty retreat and the Head of Department will circulate a comprehensive summary of survey results to the entire faculty every other year prior to the faculty retreat. Faculty discussion of the results will be a required topic at the faculty retreat at this time, or at any other time when, in the opinion of the Head of Department, the Undergraduate Advisor, and/or the Graduate Advisor, it is deemed necessary.

Feedback through those with administrative responsibility in the department and the faculty at-large is intended to provide a continuous, yet streamlined, flow of information to the entire department on the effectiveness of its programs. Clearly, the purpose of the information gathering is to provide the faculty with appropriate information to adjust its programs in a timely manner. If the information appears to reflect issues centered upon individual faculty performance, the Head will discuss such information with the individual concerned privately and not in the open forum.

(b) TIMELINE FOR IMPLEMENTATION:

The exit surveys will be developed and administered from the 2008-09 AY onward. A graduate survey has been administered to all recent graduates in 2008; three-year graduate surveys will begin in 2011.