INTRODUCTION

Student learning assessment in the Geography program is done by assessing the core and elective classes for the major. Normally, the bulk of the students in the upper division core classes are majors in our department. Majors and non-majors are approximately equally represented in several of the upper division elective classes. Introductory General Education classes that are part of the core are also assessed; the bulk of the students in these classes are not majors in our department. Because of the rotation of classes offered, not all classes are assessed in any year; nearly all classes should be assessed over a two-year period.

All tenured/tenure-track Geography faculty, except for one on Sabbatical, were involved in the assessment process. Each of the 9 courses in the Major Core were assessed, as well as 6 upper-division elective courses and two Honors Courses. All Learning Objectives related to the 5 major educational Goals have been addressed by a variety of assessment methods.

Note: 1. In regards to the expectations, we have initially set up a three point scale to determine how well the students meet the learning objectives in all imbedded questions and exercises. A score of 80% or higher indicates Superior performance, 60% to 79% indicates Satisfactory, while those scoring below 60% are In Need of Improvement.

2. In regards to how the results are shared, all Geography faculty share assessment duties and meet as a committee several times per year. Each provides contributions to the Annual Student Learning Assessment Program Summary and receives a copy of the finished product and the feedback from the Assessment Office.
PART ONE

<table>
<thead>
<tr>
<th>What are the learning objectives?</th>
<th>How, where, and when are they assessed?</th>
<th>What are the expectations?</th>
<th>What are the results?</th>
<th>Committee/ person responsible? How are results shared?</th>
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<tr>
<td><strong>Goal 1.</strong> Students will develop an expertise in using and creating maps, databases and other geographic tools to present Physical and human characteristics, and organize and analyze information in a spatial context.</td>
<td>Students were assessed in: GEG 3800 Cartography, by using a capstone mapping project, during the last three weeks of the class.</td>
<td>In GEG 3800, students are expected to be able to create maps, or sets of related maps, that demonstrate an ability to produce a succinct visual display of geospatial information. A capstone mapping project is selected by the student at the end of the semester, where the student must create a poster presentation that demonstrates proper use of spatial variables. Meets objectives 1.1 and 1.2.</td>
<td>In GEG 3800, only two students were non-majors. Each of the 19 students produced a poster that scored above an 80%. With the advent of computer cartography, and color laser printers, students can produce better quality maps and graphics faster than ever before. This provides more time for students to choose and analyze relationships between the spatial data they are using.</td>
<td>Vincent Gutowski was responsible for assessment of GEG 3800 and GEG 3875.</td>
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<td><strong>Learning Objectives</strong></td>
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<td>1.1 Uses and creates maps to interpret physical and human characteristics such as scale, distance, climate, soils, resource distribution, and other spatial information in determining geographic patterns.</td>
<td>GEG 3875 Field Methods in Geography, by using an imbedded question in the final exam.</td>
<td>In GEG 3875, students are expected to conduct field surveys with increasing levels of sophistication and technology. Field exercises are problem oriented, with solutions based on accurate field data collection and lab analysis. An imbedded, comprehensive question in the final examination allows assessment of whether the students have met learning objectives 1.1 and 1.2</td>
<td>In GEG 3875 all 13 students were Geography majors; 12 of the 13 scored above an 80%, with 6 people scoring 90% or better. One student scored a 71%, indicating satisfactory achievement. Students seem to welcome the field experience and are satisfied when analysis of information gathered agrees with theoretical models presented in the classroom. If the data does not fit the models, then peculiarities in the variables are discussed.</td>
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<tr>
<td>Course</td>
<td>Description</td>
<td>Assessment Details</td>
<td>Responsible Assessment</td>
<td>Course Details</td>
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<td>GEG 3885, Quantitative Methods in Geography</td>
<td>Comprehensive examinations of the basic quantitative methodologies applied in geography and a set of weekly exercises.</td>
<td>In GEG 3885, Quantitative Methods in Geography, students are expected to learn a broad range of basic descriptive and inferential statistical techniques commonly used in analysis of geographical data and mapping. Two major examinations and a series of weekly exercises involving data analyses methodologies were given throughout the semester to evaluate if the students met the learning objectives 1.1 and 1.2 in this course.</td>
<td>Belayet Khan</td>
<td>GEG 3885</td>
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<td>GEG 4890 Geographic Information Systems</td>
<td>Two sequential questions imbedded in the final exam.</td>
<td>In GEG 4890 Geographic Information Systems, students learn a sophisticated method of connecting relational databases with an industry-standard, spatial analytical mapping software. The sequential questions were designed to assess whether the student understood the methodology of connecting several data sets to one map and to make queries about the spatial data. The questions allow assessment of whether the students have met learning objectives 1.1 and 1.2.</td>
<td>Steven Di Naso</td>
<td>GEG 4890</td>
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<td>In GEG 4890 Geographic Information Systems, 7 of the 16 students were majors, 9 were graduate student. Evaluation of the results of the two, related, imbedded questions indicates that 13 students scored above an 80% (Superior), 1 was Satisfactory, and 2 In Need of Improvement.</td>
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<td>Belayet Khan was responsible for assessment of GEG 3885.</td>
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<td>Steven Di Naso was responsible for assessment of GEG 4890.</td>
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**Goal 2.** Students will gain an understanding of the complex and diverse human, physical and environmental characteristics that provide the basic concepts of places and regions.

**Learning Objectives**

2.1 Understand and apply geographic themes and attributes to develop concepts of places and regions.

2.2 Develop Criteria needed to form regions and be able to explain why physical, human, and environmental regions are essential.

2.3 Be able to determine how physical, human, and environmental regions evolve and how they are important.

<table>
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<tr>
<th>Students were assessed in:</th>
<th>Students in <strong>GEG 1200G</strong> were expected to show improvement in mean scores of a set of 15 questions given early in the course, and again near the end of the course. Questions were selected to determine if students met learning objectives 2.1, 2.2 and 2.3.</th>
<th>Results indicate that students in two large (N=90 in each) sections of <strong>GEG 1200G</strong> improved their collective achievement level from Needs Improvement to Satisfactory in each section. The Fall 2004 class average score improved from a 51% (Needs Improvement) to a 66% (Satisfactory): the Spring 2005 class average score improved from a 50% (Needs Improvement) to a 67% (Satisfactory).</th>
<th>Mike Cornebise was responsible for assessment of <strong>GEG 1200G</strong> and <strong>GEG 3025</strong>.</th>
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<tr>
<td><strong>GEG 1200G World Regional Geography</strong>, by using a pre-test, post-test question set.</td>
<td><strong>GEG 3025 Geography of the U.S. and Canada</strong>, by using an imbedded question on the final exam.</td>
<td><strong>GEG 3025</strong>, an essay question was used so students could demonstrate their ability to incorporate aspects of physical and cultural geography to address a case study problem. The problem involved irrigation and water policy in an arid area with agriculture and rapid population growth. The question addressed learning objectives 2.2 and 2.3.</td>
<td><strong>GEG 3050</strong> students did very well on both questions. Of the 19 who completed the mid-term exam, 16 were Superior, 7 Satisfactory, and 1 Needs Improvement. The overall average was 80%. The results were very similar for the final exam question with 14 Superior, 3 Satisfactory, 2 Needs Improvement.</td>
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<td><strong>GEG 3050 Geography of Africa</strong>, by using imbedded questions on the mid-term and final exam.</td>
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### Goal 3.

Students will acquire a comprehensive understanding of the physical processes that lead to the formation of unique patterns and shapes on the surface of the earth. Moreover, they will develop an appreciation of how physical environments affect human systems and how human actions modify the physical environment.

#### Learning Objectives

1. Identify and demonstrate how physical attributes of a landform determine the human activities of a region.
2. Identify and demonstrate how the human activity within a region modifies the physical properties of the region and the significance of the modification to the overall environment.
3. Understand the dynamic nature of the physical and human processes of the earth.

#### Students were assessed in:

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<tr>
<th>Course</th>
<th>Methodology</th>
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<tr>
<td><strong>GEG 3420 Geomorphology</strong></td>
<td>by producing a term paper directly addressing Goal 3 and its objectives. The term paper is a progressive assignment with numerous task submissions and feedback dates. The course is Writing Intensive and the paper may be used for the Electronic Writing Portfolio.</td>
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<tr>
<td><strong>ESC 3550 Surface Water Processes and Resources</strong></td>
<td>by using an imbedded, cumulative field/laboratory exercise.</td>
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In **GEG 3420**, students are expected to understand how internal and external forces create and modify the different topographic features on the earth. They are also expected to understand the constraints placed upon human activity by these natural processes and how human actions affect Earth’s natural systems. The completed term paper will illustrate the level of understanding of complex human/environment relations, as outlined in learning objectives 3.1, 3.2 and 3.3.

In **ESC 3550**, students were expected to spend several weeks on a set of environmental problems, by collecting field data using a variety of techniques, analyzing the data, and presenting it in an illustrated scientific report. The report illustrates the student’s comprehensive knowledge of measuring the effects of human interaction with the

Vincent Gutowski was responsible for assessment of **GEG 3420** and **ESC 3550**.
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<th>Course</th>
<th>Description</th>
<th>Outcome</th>
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<td><strong>GEG 3200</strong> Human Impact on the Environment</td>
<td>by using an imbedded assignment.</td>
<td>The imbedded activity for <strong>ESC/GEG 3200</strong> was a debate paper to be done in teams of two. Each member of the team was responsible for a 2-3 page argument on a current environmental issue and a one page summary. The students were expected to be able to research and produce a well-written argument illustrative of meeting Objectives 3.2 &amp; 3.3. The results of this exercise show that the students in <strong>ESC/GEG 3200</strong> had a good knowledge of current issues involving human/environmental interactions. Most of the papers were well written and well researched. Students used a variety of sources including their textbooks, internet sources, and environmental magazines and books from the library. The majority of the students earned either an “A” or “B” on the paper. The overall average was approximately 83%. The lowest grade received was a “D”.</td>
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<td><strong>ESC/GEL 1300G</strong> Earth Sciences</td>
<td>by using a “pre” test given early in the course and comparing it to a “post” test, given near the end of the semester.</td>
<td>Students in <strong>ESC/GEL 1300G</strong> were expected to show improvement on the “post” test. The same questions were used for both exams and an improvement would illustrate overall success in the class. Questions were designed to assess the degree to which students met learning objectives 3.1, 3.2, and 3.3. Results indicate that the 108 students in <strong>ESC/GEL 1300G</strong> improved their average score from a 52% (Needs Improvement) to a 76% (Satisfactory) over the semester.</td>
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<tr>
<td><strong>ESC 3410</strong>, Climatology</td>
<td>by comprehensive examinations of the major climatic processes.</td>
<td><strong>ESC 3410</strong>, Climatology, it is expected that students will learn about the climatic weeks to complete all field and lab work and because of the dependence of students on each others work, communication of results was sometimes a bit rough. In <strong>ESC 3410</strong>, Climatology there were a total of 15 students and a majority of James Davis was responsible for assessment of <strong>ESC/GEG 3200</strong>. John Stimac was responsible for assessment of <strong>ESC/GEL 1300G</strong>. Belayet Khan was responsible for assessment of <strong>ESC 3410</strong>.</td>
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which operate in the earth’s atmosphere, a term paper using climatic data, and an oral presentation.

ESC 1490G, *Weather and Climate (Honors)*, a “pre” and “post” test methodology was used to evaluate student learning objectives.

ESC 1490G, *Weather and Climate (Honors)* is designed as a course for honors students. Among the goals, it is expected that students in general will show evidence of learning about how physical attributes of the earth system affects the human aspects of people at the end of the semester. A set of questions were given to students at the beginning of the semester and a set of questions were given them were from the geology/geography department. Others were majors from the departments of from Elementary Education, Economics, and Biological Sciences. Out of a total of 15 students in the class, 5 scored above 80% indicating superior performance; 10 students scored below 80% but above 60% indicating satisfactory performance. In other words, all 15 students in the course achieved above satisfactory level of performances. Apart from comprehensive examinations in the class, students also made oral presentations to show the outcome of their term papers. The term paper that used climatic data by each student was an excellent avenue to demonstrate their learning experience in climatology.

ESC 1490G, *Weather and Climate (Honors)*, the participants were all students of the Honors College. A comparison of “pre” and “post” performance of 17 students in the class showed an increase of 30.1% of their scores clearly indicating fulfilling the learning objectives.

The term paper that used climatic data by each student was an excellent avenue to demonstrate their learning experience in climatology.

(climatology) and ESC 1490G (Weather and Climate, Honors) .
to the same students at the end of the same semester for this purpose. The “pre” test and “post” test questions were similar in nature to assess objectives outlined in Learning Objectives 3. The positive differences “pre” and “post” scores of the two tests would indicate the level of learning goals achieved in the course.

### Students were assessed in:

**GEG 1100G Cultural Geography:** by using a pre-test given on the first day of class and a post-test given on the last day of class.

**ESC/GEG 3200 Human Impact on the Environment:** by using an imbedded assignment.

Students in **GEG 1100G** were expected to show improvement on the post-test. The same questions were used for both exams and an improvement would illustrate overall success in the class. Questions were designed to assess the degree to which students met learning objectives 4.1, 4.2, and 4.3. The imbedded activity for **ESC/GEG 3200** was a debate paper to be done in teams of two. Each member of the team was responsible for a 2-3 page argument on a current environmental issue and a one page summary. The students were expected to be able to research and write a well-written argument illustrative of meeting Objectives 4.2 and 4.3.

These results show that students in **GEG 1100G** learned the material and were able to retain the information throughout the entire semester. In all four sections analyzed, the overall percent correct increase by an average of 25%.

The results of this exercise show that the students in **ESC/GEG 3200** had a good knowledge of current issues involving human/environmental interactions. Most of the papers were well written and well researched. Students used a variety of sources including their textbooks, internet sources, and environmental magazines and books from the library. The majority of the students earned either an “A” or “B” on the paper. The overall average was approximately 83%. The lowest grade

**James Davis** was responsible for assessment of **GEG 1100G** and **ESC/GEG 3200**.
PART TWO

Describe what your program’s assessment accomplishments since your last report was submitted. Discuss ways in which you have responded to the CASA Director’s comments on last year’s report or simply describe what assessment work was initiated, continued, or completed.

In the Department of Geology/Geography, both degree programs have produced separate Student Learning Assessment Plans. This is a change from the combined Plans and Summaries that we had produced in previous years. Geography faculty have produced a plan that uses multiple assessment methods, including: “pre” and “post” testing, imbedded activities, student portfolios, exit exams and alumni surveys. This academic year we have initiated the first three methods of assessment. Pre and posts tests and imbedded activities were the easiest methods to employ and the results seem reasonable and encouraging for the Geography Program. Portfolio folders, with appropriate instructions, were produced.
and given to all majors, but since only two semesters have passed, and we only have three graduates this Spring, no
trends in student participation can be established at this time. The portfolios we did receive were somewhat incomplete
because of the short time they have been in use, but the contributions in the portfolios were impressive and suggest the
portfolio method of assessment will be successful in the long run. We did not implement exit or alumni surveys; plans are
to develop and initiate these instruments in the next academic year.

Geography faculty responded to the CASA Director’s comments on last year’s report by attempting to address items 3
(Expectations) and 4 (Results). We attempted to isolate specific criteria in our assessment methods that would speak to
the educational goals and learning objectives. We also attempted to standardize the assessment results so that we could
compare results in one class with another as well as track any changes in results through time. For improvements in item
5 (Feedback Loop) we have ensured that all faculty have participated in the assessment process in all classes and that
this will be a more standardized, long-term activity for the program. The completed Summary Form will be given to all
Geography faculty. Additionally, assessment methods and results will be addressed by some Geography faculty
members over the summer, with suggestions for improvements presented to and discussed by the entire Geography
faculty early in the Fall 2005 semester.

PART THREE

Summarize changes and improvements in curriculum, instruction, and learning that have resulted from the implementation of your assessment
program. How have you used the data? What have you learned? In light of what you have learned through your assessment efforts this year and in
past years, what are your plans for the future?

This is the first year the Department has implemented separate Student Learning Assessment Plans for the Geography
Major and the Geology Major. Thus, there has been no opportunity to make changes or improvements based specifically
on the Geography Assessment Plan. However, we have learned that the initial results indicate that, in the majority of
upper-division Core and Elective classes, most students, both Geography Majors and non-majors, have met the highest
category of Expectations (based on established Learning Objectives), with a smaller percentage exhibiting Satisfactory
performance; few students fell into the lowest category, Needs Improvement. In the large, multiple section, lower-division
Core/General Education classes, average scores on the “pre” tests fell into the Needs Improvement category, while the
average scores on the identical “post” test fell into the Satisfactory category, indicating students were meeting the learning
objectives.

Perhaps the most significant improvement is that Geography faculty members have embraced and learned from the
process of total participation in assessment activities. By the end of next academic year we will have assessed, in a
relatively standardized method, nearly all the classes offered in the Geography Program. We will refine our assessment methodologies as we become more familiar with the process and use assessment results to make appropriate changes to our curriculum and instruction methods. Hopefully, this will have positive effects on the learning process so that students will perform at a higher level when meeting the Learning Objectives.

At this point in time, the Geography faculty agree that designing exercises that are directly tied to comprehensive learning objectives has allowed us to pay more attention to pedagogical methods, something that may have been somewhat lacking in the past.

We have been discussing the importance of cumulative, longer-duration, field and laboratory assignments which are driven by the Learning Objectives. By asking students to collect their own data sets and compare the results to models or case studies, we can provide examples of original research, complete with all the problems encountered in the process. This seems to encourage students to engage in undergraduate research projects. Members of GTU, the Geography Honor Society have been allocating a larger part of their budget to fund student research awards and provide funds for students to present the results of their research at regional and national conferences. Collaborative research between faculty and students is growing.

Two changes in curriculum we have discussed prior to the end of the academic year, and will discuss again in the Fall, include: 1) expanding the offerings in the GIS (Geographic Information Systems) classes and offering a Certification in GISci (Geographic Information Sciences), and, 2) offer an additional Concentration in the Geography Major to include International Studies.