The General Education Category Course Instructor Group for this category consisted of the following individuals:

Paul Brown (Anthropology)          Paul Lindfors (ECET)
James Pierce (Astronomy)            Joye Bond (FCS)
William Bessler (Biological Sciences) Donald Friend (Geography)
Jeff Pribyl (Chemistry and Geology) Louis Schwartzkopf (Physics)

The GECCIG met early in Fall 2001 semester and developed the process to assess the courses in Category 3. The individual from each program was responsible for identifying the sample of students in each program, collecting the appropriate materials, and analyzing the materials to determine the level of mastery achieved. Because the programs are so different from one another, the results from each program will be presented individually.

The outcomes/objectives were determined by the General Education Committee. The rubrics that we used were also developed by the General Education Committee. However, our group modified the rubrics for objectives 1 and 2 slightly. The objectives and rubrics are attached as Appendix I.
ANTHROPOLOGY

Anthropology 220 is the only anthropology course that is in category 3. The sample for assessment consisted of all students enrolled in this course for Fall 2001 semester. The assessment was done by means of embedded questions in the course exams. The questions were each worth five points with a score of 3 or higher used to indicate an acceptable level of performance.

For objective 1, more than 70% of the students obtained the level of mastery described by rubric 3. Objectives 2 and 3 were not evaluated as they are not applicable to this course. Objective 4 is addressed by this course but the evaluator was unable to develop an appropriate instrument in the time available.

ASTRONOMY

The Astronomy courses numbered 101, 102, 104, and 115 are all part of Category 3. The students enrolled in Astronomy 101, section 1, Fall 2001 term were used as the sample. Eighty students participated in the assessment, which represents 13.6% of the students enrolled in any of these four courses. The assessment instrument was a set of multiple choice questions that was given independent of any course assignments.

The assessment instrument addressed only objective 1. Three questions were used to address rubric 1; 49% of the students answered these questions correctly. The three questions used to address rubric 2 were answered correctly by 38% of the students. The three questions addressing rubric 3 were answered correctly by 47% of the students. There is no clear pattern or conclusion that can be drawn from the data. The assessment instruments need additional development. The implementation of the assessment tools also needs additional planning.

Objectives 2, 3, and 4 were not assessed for this group.

BIOLOGICAL SCIENCES

The Biological Sciences courses numbered 100, 102, 103, 105, and 270 are all part of Category 3. The sample group consisted of the students enrolled in the daytime sections of Biology 100. This gives a total sample size of 780 students. For objectives 1 and 4, all 780 students were assessed by embedded questions in the course exams. For objectives 2 and 3, some embedded questions were used but the sample was further reduced to include all of the students in six sections (out of 30) of Biology 100. Objectives 2 and 3 were assessed by quizzes, written lab reports, and one oral lab report. The assessment included a seven week project in which the students worked in groups of 3 or 4 on an experiment of their own design.

Based on 40 questions from five exams, about 65% of the students obtained the level of mastery indicated by rubric 3 for objective 1. For objective 2, based on embedded
questions and the written and oral reports, 82% of the students attained the level of mastery indicated by rubric 4. Objective 3 had 90% of the students demonstrate a level of mastery indicated by rubric 3. Objective 4 had about 75% of students demonstrate a level of mastery indicated by rubric 3.

CHEMISTRY AND GEOLOGY

Due to a series of miscommunications and misunderstandings, no assessment data was gathered from either of these programs.

ELECTRICAL AND COMPUTER ENGINEERING AND TECHNOLOGY

The course EET 112 is part of Category 3. All students enrolled in the course for Fall 2001 term were part of the assessment. The assessment was done by embedded questions on courses exams. The embedded questions were only designed to assess objective 1 at the level of mastery indicated by rubric 1. Approximately 75% of the students met the level of mastery indicated by rubric 1. Objectives 2, 3, and 4 were not assessed.

FAMILY CONSUMER SCIENCE

Family Consumer Science 140 is part of Category 3. All of the students enrolled in the course for Fall 2001 term were part of the assessment. The assessment tools consisted of embedded questions on exams and a worksheet. Only objective 1 was assessed; objectives 2, 3, and 4 were not.

About 94% of the students attained mastery level 1. 91% of the students attained mastery level 3.

GEOGRAPHY

Geography 101 is part of Category 3. All students enrolled in section 3 for Fall 2001 term were part of the assessment. The assessment tool was a regularly assigned field exercise.

<table>
<thead>
<tr>
<th>Mastery level</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
<th>Objective 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>100%</td>
<td>75%</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
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<td>45%</td>
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<td>50%</td>
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<tr>
<td>4</td>
<td>n/a</td>
<td>25%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>
PHYSICS

The Physics courses 100, 101, 102, 105, 107, 110, 211, and 221 are all part of Category 3. The students enrolled in Physics 101 were assessed using embedded questions and two laboratory experiments. Objectives 1, 2, and 3 were assessed; objective 4 was not.

<table>
<thead>
<tr>
<th>Mastery level</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>77%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>47.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>not determined</td>
<td>90%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>n/a</td>
<td>90%</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Summary

There is tremendous disparity in the quality and quantity of assessment that was performed in the various programs. Part of this is due to the short time allowed for the process. Any conclusions drawn from this data would be meaningless except perhaps as some type of baseline. The next time this category is assessed, the process needs to start much earlier and needs much better definition.
Appendix I
Revised objectives and rubrics

Objectives/Outcomes:

Following the Completion of Category 3 of the General Education Program, students can:
1. Develop an understanding of scientific theories
2. Formulate and test hypotheses in either a laboratory or field situation
3. Communication experimental findings and interpretations
4. Apply the natural science perspective to social issues

Population:
Sample sections of Category 3 general education courses

Assessment Rubric for O/O #1: Develop an understanding of scientific theories

Revised rubric #1
1. Student can demonstrate an understanding of basic scientific terminology and principles.
2. Student can apply appropriate terminology and principles to solve scientific problems.
3. Student can utilize scientific principles and observational/experimental data to evaluate hypotheses and theories.

Level of Mastery
For year 1, baseline data will be gathered

Assessment Rubric for O/O #2: Formulate and test hypotheses in either a laboratory or field situation

Revised rubric #2
1. Student can make accurate observations or take accurate quantitative data.
2. Student can interpret observations or data.
3. Student can formulate an hypothesis and describe a simple experiment to test the hypothesis.
4. Student can formulate a testable hypothesis, conduct a simple experiment to test the hypothesis, and evaluate the hypothesis based upon his/her interpretation of the experimental outcome.

Level of Mastery
For year 1, baseline data will be gathered

Assessment Rubric for O/O #3: Communication experimental findings and interpretations
1. Student can effectively communicate experimental results
2. Student can effectively communicate experimental results and the interpretation of those results
3. Student can effectively communicate the application of scientific method to the experiment

Level of Mastery
For year 1, baseline data will be gathered

Assessment Rubric for O/O #4: Communication experimental findings and interpretations
1. Student can identify a relationship between the natural science perspective and a social issue
2. Student can describe a relationship between the natural science perspective and a social issue
3. Student can analyze a relationship between the natural science perspective and a social issue

Level of Mastery
For year 1, baseline data will be gathered