Competency 5: The USC Upstate graduate should demonstrate responsible and appropriate use of information technologies.

5.1 Students gather and correctly process information through appropriate use of technological tools.
5.2 Students demonstrate the ability to use information technologies to communicate information to others.

~Approved by Faculty Senate Spring 2009

Assessment Measures

5.1 & 5.2 Total Testing

Total Testing provides testing to measure levels of participants’ skills—helping you decide whether they have basic, intermediate, or advanced skills. The bulk of the questions are interactive, not multiple choice, although multiple choice questions are an option. In order to answer each question, participants must perform a task and have the ability to use any method in order to complete it. The test typically includes beginner, intermediate, and advanced level questions all within one test.

Customization

USC Upstate’s CAT 5 determined that the most important areas of computer skills relating to this competency are Internet Explorer (information gathering), MS Excel (information processing) and MS Word (information processing and communication). Additionally, CAT 5 agreed that a basic understanding of the computing environment was necessary foundationally for the SLOs. Working with Total Testing, an assessment was created that addressed each of the fundamental topics.

The custom assessment consists of 50 question—10 data literacy (basic computer skills), 10 Internet Explorer 6.0, 15 MS Excel and 15 MS Word—representing a variety of skill levels. It is intended to take about 50 minutes (10 minutes for instructions, 40 minutes of testing) to complete and requires access to a computer connected to the Internet.

Score Reports

From the Total Testing score report, CAT 5 can get an overall score, average scores by question levels (basic, intermediate, and advanced), average scores by area (digital literacy, Excel, Word, and Internet Explorer), and average scores on topics within each area.
Action Plan (from departments with courses supporting this competency)

Department: Informatics  
Course(s): SIMS 101  

SLO 5.1 Use of tools to gather information...  
In Phase 1 of a 4-phase project, students make some type of assertion then identify Internet-based sources that may or may not prove their assertion.

In-class discussion of ethical issues presented by technology that originate from the textbook. In addition, students are asked to research a technology that is controversial in nature, post it to the discussion forum and asked to comment their peer's findings.

SLO 5.2 Use of information technology to communicate to others...  
Students choose from list of pre-determined topics to research for accuracy, safety and suitability. They also rate the sources that support their findings for accuracy and suitability. The results are posted to a discussion forum where they will be discussed in class.

In-class discussion of ethical issues presented by technology that originate from the textbook. In addition, students are asked to research a technology that is controversial in nature, post it to the discussion forum and asked to comment their peer's findings.

The third submission in the 4-phase project is a 5 minute PowerPoint presentation offering a high level view showing the results of the study.
Gen Ed CAT 5
Information Technology Literacy

Assessment Results

Total Testing Spring 2010

N: 147
Avg. Time Taken: 31 Minutes
Avg. Overall Score: 65.54

Average Basic Score: 79.27
Average Intermediate Score: 59.78
Average Advanced Score: 44.51

<table>
<thead>
<tr>
<th>Topic</th>
<th># of Questions</th>
<th>Avg % Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Literacy-Applications</td>
<td>3</td>
<td>88.52%</td>
</tr>
<tr>
<td>Digital Literacy-IT Concepts</td>
<td>1</td>
<td>75.51%</td>
</tr>
<tr>
<td>Digital Literacy-Operating Systems</td>
<td>2</td>
<td>82.65%</td>
</tr>
<tr>
<td>Digital Literacy-Problem Solving</td>
<td>2</td>
<td>55.78%</td>
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<tr>
<td>Digital Literacy-Software</td>
<td>2</td>
<td>70.41%</td>
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<tr>
<td><strong>Digital Literacy Combined</strong></td>
<td><strong>10</strong></td>
<td><strong>74.57%</strong></td>
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<tr>
<td>Excel 2007-Analysis</td>
<td>3</td>
<td>48.46%</td>
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<tr>
<td>Excel 2007-Editing</td>
<td>5</td>
<td>60.95%</td>
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<tr>
<td>Excel 2007-File Management</td>
<td>1</td>
<td>40.14%</td>
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<tr>
<td>Excel 2007-Formatting</td>
<td>4</td>
<td>61.56%</td>
</tr>
<tr>
<td>Excel 2007-Printing</td>
<td>1</td>
<td>86.39%</td>
</tr>
<tr>
<td>Excel 2007-Spreadsheet</td>
<td>1</td>
<td>88.44%</td>
</tr>
<tr>
<td><strong>Excel 2007 Combined</strong></td>
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<td><strong>64.32%</strong></td>
</tr>
<tr>
<td>Internet Explorer 6.0-CUSTOMIZING</td>
<td>3</td>
<td>52.58%</td>
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<tr>
<td>Internet Explorer 6.0-File Management</td>
<td>1</td>
<td>75.51%</td>
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<tr>
<td>Internet Explorer 6.0-Web Pages</td>
<td>6</td>
<td>73.49%</td>
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<tr>
<td><strong>Internet Explorer Combined</strong></td>
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<td><strong>67.19%</strong></td>
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<tr>
<td>Word 2007-Editing</td>
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<tr>
<td>Word 2007-File Management</td>
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<tr>
<td>Word 2007-Formatting</td>
<td>9</td>
<td>62.45%</td>
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<tr>
<td>Word 2007-Tables and Graphics</td>
<td>2</td>
<td>40.14%</td>
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<tr>
<td>Word 2007-Tools and Automation</td>
<td>2</td>
<td>67.35%</td>
</tr>
<tr>
<td><strong>Word 2007 Combined</strong></td>
<td><strong>15</strong></td>
<td><strong>65.28%</strong></td>
</tr>
</tbody>
</table>
Gen Ed CAT 5 reviewed the data from the spring 2010 Total Testing administration and agreed that, overall, the assessment provided meaningful results. After reviewing and testing several other applications designed to assess information technology literacy (My IT Lab by Pearson, SimNet by McGraw Hill, and SAM by Cengage), the committee decided to implement SAM by Cengage in the next administration. SAM uses the same questions as Total Testing (they purchased the rights to the questions from Total Testing), but their testing environment and reporting are more robust and user-friendly. Switching to SAM will also allow us to compare future results with those of Spring 2010.

Gen Ed CAT 5 discussed a variety of ways to set benchmarks for this competency and determined that, initially, a simple benchmark was best. Currently, students score about 80% correct on the basic questions, 60% correct on the intermediate questions, and 45% on the advanced questions. Rather than focusing on one of these types of questions, the committee agreed that increasing the overall score of 65.5% correct would likely be more beneficial, regardless of whether students answered more basic, intermediate, or advanced questions correctly. The CAT set an initial benchmark of an overall score of 70.

Students did well on much of the assessment, although they did somewhat better on Digital Literacy items (74.6% correct) than on MS Excel, MS Word, and Internet Explorer tasks (64.3% correct, 65.3% correct, and 67.2% correct, respectively.)
Suggestions for improvement (from CAT to departments with courses supporting this competency)

Based on the data collected in the first assessment of the Information Technology Literacy competency, the following are suggestions of improvement measures that could be implemented in courses. These are only suggestions and the list is not exhaustive. Departments are encouraged to develop different improvement measures that fit better with their course(s). If you would like to discuss these or other improvement measures, please contact a member of Gen Ed CAT 5.

- Require students to find research documents on the Internet and e-mail the documents/webpages to the instructor.
- Require students to find research documents on the Internet and copy/paste them into an MS Word document for submission.
- Require students to represent data in MS Excel (both tables and graphs)
- Require students to represent data in MS Word (both tables and graphs)
- Require students to e-mail a document as a .zip file folder.
- Require students to submit data in an MS Excel workbook with data represented in multiple ways (bar graph, line graph, pie chart) with each graph on a separate and appropriately labeled worksheet.
- Require students to submit projects electronically—via e-mail, flash drive, etc.—and specify a naming strategy for them (i.e., firstname.lastname.course.date).
- Include document formatting as a part of students’ grades on projects, and specify what is done incorrectly.
- Specify a title page layout, have students provide it as part of a rough draft submission, and give students feedback/help with correcting formatting issues.
- Show students how to create a reference list or works cited page (or similar document) in an MS Word table to facilitate alphabetization.
- Develop an exercise where you create an electronic document similar to the finished product students will be submitting (research paper, etc.) but with formatting errors. Require students to electronically correct the document and submit the revision as practice for their project.
Action Plan (from departments with courses supporting this competency)

**SATH 101**  
SLO 5.1 Students must successfully demonstrate their ability to use blackboard to view and complete assignments.

SLO 5.2 Students must use word-processing programs to complete assignments.

**SATH 105**  
SLO 5.1 Students must successfully demonstrate their ability to use blackboard to view and complete assignments.

**SATH 106**  
SLO 5.1 Students must successfully demonstrate their ability to use blackboard to view and complete assignments.

Department Chair Signature: ___________________________  Date: ________________
Action Plan (from departments with courses supporting this competency)

Department:
Course(s):

SECO 291
SLO 5.1: Require students to submit data in an MS Excel workbook with data represented in multiple ways (bar graph, pie chart, and scatter) and appropriately labeled (homework assignment).

Department Chair Signature: _____________________________ Date: ___________________
Action Plan (from departments with courses supporting this competency)

Department: Mathematics and Computer Science  
Course(s): SCSC 138, 150

Require students to submit data in an MS Excel workbook with data represented in multiple ways (bar graph, line graph, pie chart) with each graph on a separate and appropriately labeled worksheet.

Require students to e-mail a document as a .zip file folder.

Require students to submit projects electronically – via e-mail, flash drive, etc. -- and specify a naming strategy for them (i.e. firstname.lastname.course.date).

Include document formatting as a part of student's grades on projects, and specify what is done incorrectly.

Department Chair Signature: Jerome Lewis  
Date: 11/24/10
Gen Ed CAT 5
Information Technology Literacy
Action Plan

Department: Psychology
Course: SPSY 225 – Psychological Statistics

Competency 5

SLO 5.2: Students demonstrate the ability to use information technologies to communicate information to others.

Students will complete an independent project using a statistical package such as Systat, SAS, SPSS, etc. and communicate the results in appropriate graphical and tabular form.
Gen Ed CAT 5
Information Technology Literacy

Action Plan (from departments with courses supporting this competency)

Department: Natural Sciences and Engineering

Course(s):

SBIO 101 & L
Students must download pdf’s of outside reading articles.
Students calculate a mean and standard deviation of data they collected in lab and then graph this data, all using Microsoft Excel.

SBIO 102 & L
Students must download pdf’s of outside reading articles. Scholar’s Academy and Honor’s student must use the ISI Web of Knowledge and Google Scholar to find recent peer-reviewed literature for a review paper on a topic of their choosing.
Students graph data they collect in Microsoft Excel as part of their lab reports. They also give a Powerpoint presentation on one of their experiments.

SCHM 111 & L
Students will be given assignments in which experimentally derived data, or information from the web, is tabulated and graphed using Excel.

SCHM 112 & L
Provide activities where students are required to present data in tables and graphs using Excel.

Department Chair Signature: Lisa Lever Date: 1/8/11