Competency 3: The USC Upstate graduate should be able to integrate and critically evaluate information.

3.1 Students are able to evaluate strengths and weaknesses of varying points of view.
3.2 Students demonstrate the ability to distinguish between pertinent and irrelevant information.

---Approved by Faculty Senate Spring 2009---

Assessment Measures

3.1 & 3.2 Measure of Academic Proficiency and Progress (MAPP) Reading/Critical Thinking Skill Area

As the only integrated test of general education skills, the Measure of Academic Proficiency and Progress (MAPP) test assesses four core skill areas (critical thinking, reading, writing, and mathematics) in a single test. The MAPP test measures:

- Proficiency in critical thinking, reading, writing and mathematics in the context of humanities, social sciences and natural sciences
- Academic skills developed, versus subject knowledge taught, in general education courses

Critical Thinking Scoring

Level I
Students who are proficient can:
- recognize factual material explicitly presented in a reading passage
- understand the meaning of particular words or phrases in the context of a reading passage

Level II
Students who are proficient can:
- synthesize material from different sections of a passage
- recognize valid inferences derived from material in the passage
- identify accurate summaries of a passage or of significant sections of the passage
- understand and interpret figurative language
- discern the main idea, purpose or focus of a passage or a significant portion of the passage

Level III
Students who are proficient can:
- evaluate competing causal explanations
- evaluate hypotheses for consistency with known facts
- determine the relevance of information for evaluating an argument or conclusion
- determine whether an artistic interpretation is supported by evidence contained in a work
- recognize the salient features or themes in a work of art
- evaluate the appropriateness of procedures for investigating a question of causation
- evaluate data for consistency with known facts, hypotheses or methods
- recognize flaws and inconsistencies in an argument
3.1 & 3.2 Critical Thinking (CAAP)

The CAAP Critical Thinking Test is a 32-item, 40-minute test that measures students' skills in clarifying, analyzing, evaluating, and extending arguments. An argument is defined as a sequence of statements that includes a claim that one of the statements, the conclusion, follows from the other statements. The Critical Thinking Test consists of four passages that are representative of the kinds of issues commonly encountered in a postsecondary curriculum. A passage typically presents a series of sub-arguments in support of a more general conclusion or conclusions. Each passage presents one or more arguments using a variety of formats, including case studies, debates, dialogues, overlapping positions, statistical arguments, experimental results, or editorials. Each passage is accompanied by a set of multiple-choice test items. A total score is provided for the Critical Thinking Test; no sub scores are provided.

Content Specifications Summary for the CAAP Critical Thinking Test

<table>
<thead>
<tr>
<th>Content Category</th>
<th>Proportion of Test</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of elements of an argument</td>
<td>.53–.66</td>
<td>17–21</td>
</tr>
<tr>
<td>Evaluation of an argument</td>
<td>.16–.28</td>
<td>5–9</td>
</tr>
<tr>
<td>Extension of an argument</td>
<td>.19</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>1.00</td>
<td>32</td>
</tr>
</tbody>
</table>
# Critical Thinking Assessment Results

<table>
<thead>
<tr>
<th>MAPP Results Score</th>
<th>Spring 2010</th>
<th>Spring 2008</th>
<th>National Mean (Among Master’s (Comprehensive) Colleges and Universities I &amp; II)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Our Mean</td>
<td>Standard Deviation</td>
<td>Our Mean</td>
</tr>
<tr>
<td>N</td>
<td>168</td>
<td>460</td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>442.64</td>
<td>18.5</td>
<td>447.37</td>
</tr>
<tr>
<td>Skills Subscore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>111.42</td>
<td>5.88</td>
<td>112.83</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Proficient</th>
<th>Marginal</th>
<th>Not Proficient</th>
<th>Proficient</th>
<th>Marginal</th>
<th>Not Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading, Level 1</td>
<td>67%</td>
<td>17%</td>
<td>16%</td>
<td>75%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Reading, Level 2</td>
<td>37%</td>
<td>17%</td>
<td>46%</td>
<td>44%</td>
<td>23%</td>
<td>33%</td>
</tr>
<tr>
<td>Critical Thinking, Level 3</td>
<td>8%</td>
<td>13%</td>
<td>79%</td>
<td>8%</td>
<td>16%</td>
<td>76%</td>
</tr>
</tbody>
</table>

## CAAP Critical Thinking Results Spring 2010

N=178

### Gender
Male=70
Female=107
Blank=1

<table>
<thead>
<tr>
<th></th>
<th>Upstate</th>
<th>Nat’l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaled Score Avg</td>
<td>62.1</td>
<td>63.2</td>
</tr>
<tr>
<td>Standard Dev</td>
<td>5</td>
<td>5.2</td>
</tr>
<tr>
<td>N</td>
<td>178</td>
<td>4077</td>
</tr>
</tbody>
</table>

**USC Upstate Percentile: 40th**
CAT findings from data

While the data show that Upstate students’ critical thinking skills are on par with the national average, we would like to see a greater proportion of our students scoring in the proficient range for Critical Thinking, Level 3 of the MAPP test.

The Committee noted that the percent of students scoring in the proficient range for Reading Level 1 declined from 2008 to 2010; however, this might be explained by the smaller pool of students taking the MAPP test in 2010. Although it is unlikely that the differences between the 2008 scores and the 2010 scores are statistically significant, it should be tracked for future administrations. Additionally, it might be informative to compare the 2010 data to a subset of the 2008 data, reducing the later data set to only those classes who also took the test in 2010 in order to determine if there was truly a meaningful decline in student performance. (A statistical test would also tell us if there was a significant drop in performance.) The CAT will continue monitoring.

Of greater concern to the Committee was the lack of specificity in the MAPP and CAAP results. We are unable to discern our students' strengths and weaknesses in critical thinking. The standard version of the MAPP provides more detailed feedback on student performance than the abbreviated version our students take. Unfortunately, the standard version requires 2-2 ½ hours for administration, making it impractical for administration in senior seminars. Regardless, the committee will look at this version, as well as additional assessment options, to see if another assessment would better fit our needs.
Suggestions for improvement (from CAT to departments with courses supporting this competency)

Based on the data collected from the first administration of the CAAP Critical Thinking assessment and the second administration of MAPP, CAT 3 offers the following ideas for improvement measures that could be implemented in courses supporting the Critical Thinking competency. (These are only suggestions and this list is not exhaustive. Feel free to develop different improvement measures that fit better with your course(s).) If you would like to discuss these or other improvement measures, please contact a member of CAT3.

- Upon being presented with results and conclusions from a poorly designed experiment, students will be asked to determine if the experiment is an appropriate test of the hypothesis, comment on the implications of the results, and design a more appropriate test of the hypothesis.
- Have students perform internet searches regarding course topics. The student should find some websites providing factual and research based information (journals, national association websites, etc...) and others providing opinion-based or potentially incorrect data (Wikipedia, etc...) and provide a synopsis of the different information found in each.
- Develop an activity where students divide into two groups and debate opposing sides of a course-related topic.
- Require students to argue a topic from a differing viewpoint.
- Provide students with case studies related to the course that have extraneous information that is irrelevant to the course. Ask students to synopsize the case study and draw conclusions.
- Require students to write a justification for their opinion regarding a topic that requires them to assimilate information learned. For example, “People argue that voting is a waste of time because the candidate with the highest quality media campaign wins. How could this problem be remedied?”
- Encourage discussions regarding moral or ethical implications of course-related topics.
Action Plan (from departments with courses supporting this competency)

<table>
<thead>
<tr>
<th>Course</th>
<th>SLO</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SATH 101</td>
<td>3.1</td>
<td>Require students to complete at least one paper that demonstrates independent thought, analytical insights and creative interpretations.</td>
</tr>
<tr>
<td>SATH 101</td>
<td>3.2</td>
<td>Require students to complete at least one paper that creatively analyzes and evaluates works of art and discusses the ways in which the arts and humanities shape and are shaped by culture.</td>
</tr>
<tr>
<td>SATH 105</td>
<td>3.2</td>
<td>Require students to complete essays on quizzes and exams that creatively analyze and evaluate works of art and discusses the ways in which the arts and humanities shape and are shaped by culture.</td>
</tr>
<tr>
<td>SATH 106</td>
<td>3.2</td>
<td>Require students to complete essays on quizzes and exams that creatively analyze and evaluate works of art and discusses the ways in which the arts and humanities shape and are shaped by culture.</td>
</tr>
<tr>
<td>SMUS 110</td>
<td>3.2</td>
<td>Have students perform internet searches regarding course topics. The student should find websites providing factual and research based information (journals, national association websites, etc...) and others providing opinion-based or potentially incorrect data (Wikipedia, etc...) and provide a synopsis of the different information found in each.</td>
</tr>
<tr>
<td>SMUS 140</td>
<td>3.2</td>
<td>Have students perform internet searches regarding course topics. The student should find websites providing factual and research based information (journals, national association websites, etc...) and others providing opinion-based or potentially incorrect data (Wikipedia, etc...) and provide a synopsis of the different information found in each.</td>
</tr>
<tr>
<td>SSPH 201: Public Speaking</td>
<td>3.2</td>
<td>Students are required to deliver at least 2 research-intensive speeches. Students are graded significantly on the their ability to incorporate pertinent research into their speech as evidence for claims.</td>
</tr>
<tr>
<td>STHE 161</td>
<td>3.1</td>
<td>Students are required to read chapters from the text and are tested on the content of those chapters. In addition, students are required to write critical essays, which contain proper structure, punctuation, and spelling, as well as foundational content such as history, genre, period, technique, playwrights and their plays, and the cultural aspects and associations of theatre throughout history. Grading is determined by a strict rubric of factual observations of each step in the process. Essays need to include factual research from the text and outside sources. Students are required to record in-class notes during discussions and integrate those notes into their tests.</td>
</tr>
<tr>
<td>STHE 170</td>
<td>3.1</td>
<td>Requires students to consider the dramatic action of play scripts in order to extract the primary objectives of a character. Students must evaluate the verbal and non-verbal actions as defined by the dramatic text in order to realize the character they are playing. Students are required to examine the lines in order to reveal the subtext of character action.</td>
</tr>
</tbody>
</table>

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

Note: all actions to be implemented beginning Spring 2011

Department: History, Political Science, Philosophy, & American Studies

Course(s):

**SHST 101 & 102**
- Require students distinguishing between pertinent and irrelevant information.
- Provide students with objective questions that require the deduction of pertinent and irrelevant information on examinations and quizzes at regular intervals during the semester.
- Assign outside reading materials that requires students to determine the pertinent information as it relates to the material being covered and connect that material during class exercises and in assignments.

**SHST 105 & 106**
- Require students distinguishing between pertinent and irrelevant information.
- Provide students with objective questions that require the deduction of pertinent and irrelevant information on examinations and quizzes at regular intervals during the semester.
- Assign outside reading materials that requires students to determine the pertinent information as it relates to the material being covered and connect that material during class exercises and in assignments.

**SGIS 201: American National Government**
- Require students to write a justification for their opinion regarding a topic that requires them to assimilate information learned. For example, “People argue that voting is a waste of time because the candidate with the highest quality media campaign wins. How could this problem be remedied?
- Develop an activity where students divide into two groups and debate opposing sides of a course-related topic
- Require students to argue a topic from a differing viewpoint
- Encourage discussions regarding moral or ethical implications of course-related topics. Example: In a classroom exercise, students list arguments first in support, then in opposition of a course-related topic. Having considered both the support and opposition, they are asked to determine which side has stronger arguments and explain why.

**SGIS 301: Introduction to Political Science**
- Require students to defend positions, especially ones that are not how they actually feel.
• Present students with real-world examples of political phenomenon and have them assess how the studies were conducted. What was good and bad about the research and how could it be improved? How might the bad aspects of the research affect the results?
• Include an assignment that requires students to conduct research in order to establish and defend a position.

SGIS 320: Comparative Politics

• Require students to determine if the experiment results and conclusions from a poorly designed experiment are an appropriate test of the hypothesis, comment on the implications of the results, and design a more appropriate test of the hypothesis.
• Require students to write a justification for their opinion regarding a topic that requires them to assimilate information learned. For example, “People argue that voting is a waste of time because the candidate with the highest quality media campaign wins. How could this problem be remedied?”
• Require the use of comparative methodology. Presented students with a “murder mystery” at the beginning of the semester where they have to determine the cause of death using the comparative method. Originally, students are provided with data containing too many variables for the number of cases they have to work with. The students have to figure out how to correct this in order to find the correct cause of death. Later in the semester, students are required to create a truth table showing that they have assimilated the ability to isolate necessary and sufficient conditions. For the second suggestion, students are currently required to write a justification for the use of one type of electoral system over another based on information they learn in class.

SLGC 205: Introduction to Logic and Rhetoric

• Require students to identify the necessary ingredients for sound or strong arguments, and to distinguish them from invalid or weak arguments. Test on their ability to do this.
• Require students to identify various fallacies, arguments that tend to persuade but should not.
• Require students to critically evaluate various arguments by identifying either weak arguments or false premises. They will develop their ability at generating counterexamples for false or dubious claims.

SLGC 207: Deductive Logic

• Require students to identify the necessary ingredients for sound or strong arguments, and to distinguish them from invalid or weak arguments. Test on their ability to do this.
• Require students to identify various informal fallacies, arguments that tend to be psychologically persuasive but are in fact unreasonable.
• Require students to various formal fallacies common in deductive reasoning.
SPHL 102: Introduction to Philosophy

- Students will be given reading assignments that argue for opposing philosophical viewpoints. They will be asked to identify the conclusions and then the premises the authors use to support these conclusions.
- Students will be presented with weak arguments that either contain false assumptions or are invalid. They will be asked to discuss the difference between the two.
- On the essay exams, students will be required to evaluate critically the arguments for the various philosophical positions. They will then be asked to argue for a particular position and then reflect critically on their own argument.

SHST 105 106: History of the United States

- Require students distinguishing between pertinent and irrelevant information.
- Provide students with objective questions that require the deduction of pertinent and irrelevant information on examinations and quizzes at regular intervals during the semester.
- Assign outside reading materials that requires students to determine the pertinent information as it relates to the material being covered and connect that material during class exercises and in assignments.

SPHL 211: Contemporary Moral Issues

- Assign reading that argues for opposing philosophical viewpoints on sensitive moral issues.
- Require students to make intellectual judgments (not emotional) about the plausibility of competing arguments and interpretations.

SREL 103: Comparative Religion

- Encourage discussions regarding moral or ethical implications of course-related topics.

SAMS 102 & 103: American Studies

- Modify examination material to require students to return to previous material in addition to new material on examinations to improve integration of material.
- Work with students in class to recognize the correspondence of reading material and lecture material.
Department Chair Signature: [Signature] Date: November 3, 2010
Department: Informatics
Course(s): SIMS 101

SLO 3.2 Pertinent information...
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.
### Action Plan (from departments with courses supporting this competency)

**Department:**  
**Course(s):**

**SECO 222**  
SLO 3.1: Divide the students into two groups and debate the pros and cons of unionism.

**SECO 221**  
SLO 3.2: Upon being presented with an analysis of GDP data for various countries and its conclusions, students will be asked to determine if the analysis is appropriate, suggest ways of improving the analysis, and comment on the implications of the analysis.

---

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

**Department:** Languages, Literature, and Composition  
**Course(s):**

**SCHI 102, SEGL 101, SEGL 102, SFRN 102, SGRM 102, SPN 102**
- Encourage discussions regarding moral or ethical implications of course-related topics.

---

**Department Chair Signature:**

**Date:** November 17, 2010
Gen Ed CAT 3
Critical Thinking
Action Plan

Department: Psychology
Course: SPSY 101 – Introduction to Psychology

Competency 3

SLO 3.1: Students are able to evaluate strengths and weaknesses of varying points of view.

Lectures on basic theoretical viewpoints will include that some theories may be totally or partly revised by later research on the topic or that there may be several viable theories at the same time. Lectures will also include discussion of strengths and weaknesses (criticisms) of various theories.
Action Plan
Department: Sociology, Criminal Justice, and Women’s Studies
Course(s):

SANT 102
- Assignment: Mini Research Paper: Evaluation-Mastery of the anthropological perspective, critical thinking to explain the culture being studied, and use of effective writing skills.

SGEG 101
- Students look at the criteria used in distinguishing the Upstate from other parts of the state. They talk about the criteria in terms of specific counties and how these are put together to come up with a defensible argument about what makes up the Upstate

SGEG 103
- Students look at suppliers of non-fuel minerals to the USA and the role of proximity and politics in terms of what we get what from whom.

SGEG 201
- Assignment: internal (within the Earth) forces which affect the surface. For each of the three forces of volcanism, folding and faulting studies are asked to identify what it is, how it works, the surface features formed, the areas where the forces are currently at work and extent or area affected. Here the intent is to have students focus on methods of comparison and ways of distinguishing what impact the processes have on the surface of the Earth.

SGEG 202
- Assignment: looking at maps of isotherms (temperatures) and determining why unexpected patterns would occur. For example the Norwegian coast is warmer in winter than is Berlin, never mind Warsaw or Moscow. Yet there is a reasonable explanation that centers on the oceans warming the air above them in winter while land areas & the air above them is substantially colder. The results are counter intuitive but quite real.

SSOC 101
- Writing Assignment: Theory Application – Techniques of Neutralization. Think of something “bad” you have done. Can you resonate to any of these techniques of neutralization? How important is it that people be able to “neutralize” their deviant acts? Why?

SSOC 201
3.1 Students are able to evaluate strengths and weaknesses of varying points of view.
- Soc 201 students are required to make sure that data gathered meets minimum standards, to choose from a variety of statistical tools those most appropriate for their data and purposes, and to then use these tools to evaluate statements about the data and to make accurate predictions about the population(s) of interest.

3.2 Students demonstrate the ability to distinguish between pertinent and irrelevant information.
- Soc 201 students are required to sift through data and information in order to accurately find and label the most relevant items for particular analyses. This often involves determining which facts and figures should be used in testing hypotheses and which facts and figures are extraneous to the problem(s) at hand.
CAT 3
Critical Thinking

SWST 101

- Students in SWST 101 are required to demonstrate an ability to read, analyze, and contextualize class content and reflect their understanding of this content by utilizing assigned readings in paper assignments and in class discussion (both face-to-face and online).

The Social Construction of Masculinity/Gender Roles: How are men presented? Are male gender roles reinforced? Revised? Rejected? What are the gender prescriptions for men and what are the consequences of non-compliance?

Readings/Viewing: Men and Feminism; Jackson Katz in Tough Guise and Byron Hurt in Hip-hop: Beyond Beats and Rhymes; Jensen.
Action Plan (from departments with courses supporting this competency)

Department: Natural Sciences and Engineering

Course(s):

SAST 111
Require students to argue a topic from a differing viewpoint

SAST 111L
Ask students to identify systematic errors or uncertainties in their experimental data

SBIO 110 & 110L
Students will be given an assignment to evaluate a professional experiment from a scientific journal. They will be required to pick out all the various scientific variables in the experiment and to critically analyze the experiment.

SBIO 206
SLO 3.1 There are numerous connections between genetics and societal concerns, such as stem cells, alternative reproductive technologies, rDNA technology, and eugenics. Students write opinion pieces on several topics, following class presentations and outside readings, and participate in class discussion.

SBIO 240
Students are presented with a number of bioethical assignments during the course. They must evaluate the situation(s) from multiple viewpoints. Students present potential solutions to each bioethical problem while weighing the externalities/consequences generated by each proposed solution to the issue solution.

SBIO 242 & L
Students in the laboratory now will be required to design physiological experiments and critique physiology experimental designs. Special attention will be given to the issue of physiological variation among humans and the variations/uncertainties this can generate in human physiological experiments.

SBIO 270 (this was taught in 2009 and 2010 entirely by adjunct faculty)
Students will be asked to identify assumptions and/or uncertainties in current environmental impact data and to determine how changes in those assumptions might ultimately impact the outcome of each given environmental issue covered during SBIO 270. This will be accomplished through assigned readings, class discussion, and oral presentations.

SCHM 105
Require students to discuss environmental problems and critically evaluate possible solutions.

SCHM 106
Require students to discuss the chemistry of consumer products and critically evaluate possible hazards.
SCHM 107
Ask students to compare their results with the group results identifying systematic errors or uncertainties in their experimental data.

SGEL 101
Upon being presented with results and conclusions from a poorly designed experiment, students will be asked to determine if the experiment is an appropriate test of the hypothesis, comment on the implications of the results, and design a more appropriate test of the hypothesis (e.g. plate tectonics on other planetary bodies in the solar system).

SGEL 101L
Ask students to identify systematic errors or uncertainties in their experimental data (select specific lab(s) to be reviewed for technique problems—such as mineral or rock identification, stream processes, or ocean processes).

SGEL 102
Upon being presented with results and conclusions from a poorly designed experiment, students will be asked to determine if the experiment is an appropriate test of the hypothesis, comment on the implications of the results, and design a more appropriate test of the hypothesis (e.g. adaptation as a drive to organic change).

SGEL 102L
Ask students to identify systematic errors or uncertainties in their experimental data (select specific lab(s) to be reviewed for technique problems—such as any of the subsets of the Paleozoic life form studies).

SGEL 103
Upon being presented with results and conclusions from a poorly designed experiment, students will be asked to determine if the experiment is an appropriate test of the hypothesis, comment on the implications of the results, and design a more appropriate test of the hypothesis (e.g. earthquake control by fluid injection, or lake management at Lake Baikal).

SGEL 103L
Ask students to identify systematic errors or uncertainties in their experimental data (select specific lab(s) to be reviewed for technique problems—such as their write-ups on water management or on landfills).

SGEL 120
Require students to argue a topic from a differing viewpoint—again focus on real data and not on soft opinions or beliefs (e.g. nuclear waste storage).

SGEL 121
Require students to argue a topic from a differing viewpoint—again focus on real data and not on soft opinions or beliefs (e.g. the “value” of national parks, or development in national parks).
SGEL 123L
Ask students to identify systematic errors or uncertainties in their experimental data (select specific write-ups through the field experience and spend the necessary time to thoroughly evaluate problems and develop techniques to improve approaches…such as with the weathering or erosion sections of the lab)

SGEL 131
Require students to argue a topic from a differing viewpoint—again focus on real data and not on soft opinions or beliefs

SGEL 241
Require students to argue a topic from a differing viewpoint—again focus on real data and not on soft opinions or beliefs

SPHS 101
Upon being presented with results and conclusions from a poorly designed experiment, students will be asked to determine if the experiment is an appropriate test of the hypothesis, comment on the implications of the results, and design a more appropriate test of the hypothesis.

SPHS 101L
Ask students to identify systematic errors or uncertainties in their experimental data