



Assessment Plan for Fields of Study

Program Information	
Field of Study	Symbolic Reasoning (FSSR)
Initial semester in which data will be collected	Spring 2010
Members of Assessment Working Group	
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Program Mission Statement	
<p>The mission of Symbolic Reasoning Field of Study courses is to develop in students the skills to obtain valid solutions using one or more symbolic system. Courses within the FSSR field of study are designed to expose students to solving problems within a symbolic system and determining the appropriateness of known solution methods within a symbolic system. Students enrolled in these courses will learn to obtain valid solutions to problems using one or more symbolic systems, to translate new problems into appropriate terms for such systems, and to carry out a solution method to completion.</p>	
Means of Assessment and Targets	
<i>Learning Outcome 1</i>	
Outcome Description	Students will learn to translate problems for treatment within a symbolic system.
Target	No more than 30% of students will be rated “unacceptable” on this objective.
Data Source	All students taking a course for FSSR credit will be assessed on this objective by the instructor as described in the process document.
Means of Assessment	Students’ achievement of this objective will be assessed using an embedded assessment item selected by the instructor. This may take the form of a project or other assignment or examination question –whatever is determined to be most appropriate for this learning objective.
Means of Scoring	Student work will be scored using a standardized rubric by faculty members teaching the courses. Scores will be reported for each category on the rubric in raw numbers for each scale point category. See attached rubric.

<i>Learning Outcome 2</i>	
Outcome Description	Students will learn to recognize the rules that govern a symbolic system and to apply those rules to obtain valid solutions.
Target	No more than 30% of students will be rated “unacceptable” on this objective.
Data Source	All students taking a course for FSSR credit will be assessed on this objective by the instructor as described in the process document.
Means of Assessment	Students’ achievement of this objective will be assessed using an embedded assessment item selected by the instructor. This may take the form of a project or other assignment or examination question –whatever is determined to be most appropriate for this learning objective.
Means of Scoring	Student work will be scored using a standardized rubric by faculty members teaching the courses. Scores will be reported for each category on the rubric in raw numbers for each scale point category. See attached rubric.
<i>Learning Outcome 3</i>	
Outcome Description	Students will learn to judge the reasonableness of solutions obtained within a symbolic system.
Target	No more than 30% of students will be rated “unacceptable” on this objective.
Data Source	All students taking a course for FSSR credit will be assessed on this objective by the instructor as described in the process document.
Means of Assessment	Students’ achievement of this objective will be assessed using an embedded assessment item selected by the instructor. This may take the form of a project or other assignment or examination question –whatever is determined to be most appropriate for this learning objective.
Means of Scoring	Student work will be scored using a standardized rubric by faculty members teaching the courses. Scores will be reported for each category on the rubric in raw numbers for each scale point category. See attached rubric.
Plan for Use and Dissemination	
How will data be used to make decisions?	<p>Individual faculty teaching a course being assessed will compare the course results to the aggregate results for the entire set of assessed courses to see if one or more of the learning objectives are not being met by a sufficient/expected number of students. Adjustments to the course will be made by the instructor to enhance attainment of the learning objectives in subsequent offerings of the course.</p> <p>If the General Education Committee sees that in the aggregate the targets are not being met, then it may initiate workshops and other activities involving all faculty teaching in the field of study. The goal will be to enable faculty to consider ways to increase the number of students obtaining the learning objectives.</p>

How will results be shared?	Results from individual courses will be submitted via an on-line system to an individual designated by the General Education Committee. That individual will create a summary report for the General Education Committee's use. All instructors teaching in the field of study will receive a copy of the report. The report will be posted on the Office of Institutional Effectiveness Web site and shared with senior academic administrators.
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Assessment Rubric for Field of Study: FSSR

Learning Objective #1: Students will learn to translate problems for treatment within a symbolic system.

Unacceptable: The translation is poor showing little understanding of the problem and makes proper treatment or solution of the problem impossible.

Marginal: The translation is adequate and shows some understanding of the problem, but is not sufficient to lead to a desired solution.

Proficient: The translation is good and appropriate, allowing for proper treatment or a solution to the problem.

Exemplary: The translation is excellent, showing a strong understanding of how the symbolic system is used to represent the problem and lead to proper treatment or solution.

Learning Objective #2: Students will learn to recognize the rules that govern a symbolic system and to apply those rules to obtain valid solutions.

Unacceptable: Inappropriate rules are applied or appropriate rules are applied incorrectly.

Marginal: Generally the appropriate rules are applied but not always correctly to yield valid solutions.

Proficient: Appropriate rules are recognized and used for the particular problem/task at hand.

Exemplary: A full understanding of the rules of the system and their correct applicability are demonstrated.

Learning Objective #3: Students will learn to judge the reasonableness of solutions obtained within a symbolic system.

Unacceptable: No evidence of understanding of how to determine if a solution is appropriate or reasonable.

Marginal: Evidence of understanding of how to decide if a solution is appropriate or reasonable, but not always applied correctly.

Proficient: Strong evidence of understanding of how to determine if a given solution or method is appropriate or reasonable by correctly making a determination.

Exemplary: Demonstrates the ability to correctly determine the reasonableness of solutions in all cases.