After the Foundational Studies Program has approved a course, departments will continue through the regular departmental and college procedures. The approved course should be submitted to the University Curriculum Committee by October 1, 2011.

Instructions:

1. Complete one form per course.
2. Attach this Foundational Studies Course Application Form to the back of the University Curriculum Committee “Request for Curriculum Action” form. Both forms should be submitted to the Foundational Studies Program Office by August 19, 2011.

Part 1. Course Information

Part II. Syllabus Statement

In the space below, include the syllabus statement for this course which will appear on the first page of the syllabus for each section of this course. (Template and examples are appended to this application form.) Attach additional pages if needed.

Boise State’s Foundational Studies Program provides undergraduates with a broad-based education that spans the entire university experience. MATH 401: Senior Thesis in the Mathematical Sciences satisfies one credit of the Foundational Studies Program Finishing Foundations requirements. It supports the following University Learning Outcomes, along with a variety of other course-specific goals.

1. Write effectively in multiple contexts for a variety of audiences.
2. Communicate effectively in speech, both as speaker and listener.
3. Engage in effective critical inquiry by defining problems, gathering and evaluating evidence, and determining the adequacy of argumentative discourse.
4. Think creatively about complex problems in order to produce, evaluate, and implement innovative possible solutions, often as one member of a team.
7. Apply knowledge and the methods of reasoning characteristic of mathematics, statistics, and other formal systems to solve complex problems.

MATH 401: Senior Thesis in the Mathematical Sciences is designed to introduce students into independent mathematical work in an active and modern subject area of the mathematical sciences. You will select as senior thesis mentor any official research faculty member in the department of mathematics. Under the supervision of this senior thesis mentor you will engage in scholarly activity resulting in a written senior thesis, and you will present your findings in an appropriate public forum. The course helps to achieve the goals of the Foundational Studies Program by focusing on the following course learning outcomes. By completing this course, you will be able to:

- Summarize and describe the main aspects of a problem or subject area of the mathematical sciences in written and oral form
- Read and evaluate original mathematical literature
- Formulate questions and problems, and develop solving strategies, in a subject of the mathematical sciences
- Use technology in an adequate form for the solution of mathematical problems and for the presentation of mathematical content.

Part III. Design for Accessibility

In the space below, briefly describe plans for providing access to course materials and activities (or equivalent alternatives) to all students in adherence with the Americans with Disabilities Act. Although these plans may vary from instructor to instructor, the descriptions provided below should be representative of intended departmental and instructor practices. (See example statements appended to this form.) Attach additional pages if needed.

The instructor will work with the Disabilities Resource Center to provide reasonable accommodations to students upon request. Students making such requests are required to provide documentation from the Disabilities Resource Center, located in room 114 of the Administration Building.

Part IV. Evidence of Quality Course Design

See attached table.

Part V. Additional Justification (optional)

If the brief justification provided to the University Curriculum Committee in the proposal to accompany the “Request for Curriculum Action” is not sufficient to make the case for including the course in the Foundational Studies Program, additional (optional) narrative can be added here.

CERTIFIED FOR APPROVAL 10-12-2011.

________________________________________
Foundational Studies Program, Director

Electronically signed by Vicki Stieha,
Director, Foundational Studies Program
Boise State University
Boise State University
Foundational Studies Course
Fall 2011

Course Number and Title: MATH 401 Senior Thesis in the Mathematical Sciences

**Course Design Table**

<table>
<thead>
<tr>
<th>Foundational Studies ULO Criteria and Notions of Exemplary Work</th>
<th>Course Learning Outcomes</th>
<th>Assessment Method: Evidence of Student Learning</th>
<th>Planned Teaching and Learning Activities/Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>These are drawn from the appropriate rubric for the ULO supported by the course.</td>
<td>All learning outcomes are listed.</td>
<td>How will the outcomes be assessed in the course? (Note key assessments to be used for reporting student learning outcomes.)</td>
<td>What kind of activities will be used to support students' success on the planned assessments?</td>
</tr>
<tr>
<td>ULO1: Write effectively in multiple contexts, for a variety of audiences</td>
<td>Describe in writing mathematical contents in language appropriate to the mathematical sciences, at introductory and in depth level</td>
<td>Senior thesis will be evaluated by the mentor and a co-advisor.</td>
<td>Senior thesis mentor will discuss selected examples of effective writing with the student, proof-read and critique drafts and discuss with student before submission of senior thesis.</td>
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<tr>
<td>ULO4: Think creatively about complex problems in order to produce, evaluate, and implement innovative possible solutions, often as one member of a team.</td>
<td>Read original literature in the mathematical sciences, fill in necessary details, contribute to open questions in a subject of the mathematical sciences</td>
<td>Consultations with senior thesis mentor, Senior thesis will be evaluated</td>
<td>Discussion with senior thesis mentor, co-advisor and peers working on related problems. Senior thesis mentor will expose student to exemplary examples of creative thought and innovation in the mathematical sciences.</td>
</tr>
<tr>
<td>ULO3: Engage in effective critical inquiry by defining problems, gathering and evaluating evidence, and determining the adequacy of argumentative discourse.</td>
<td>Place the subject of study into various contexts, discuss examples and justify the usefulness of algorithms, arguments etc.</td>
<td>Senior thesis will be evaluated</td>
<td>Senior thesis mentor will guide student in techniques of gathering and evaluating evidence in the mathematical sciences, including finding source materials. Senior thesis mentor will proof-read and discuss with student before submission</td>
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<td>ULO2: Communicate effectively in speech, both as speaker and listener.</td>
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<tr>
<td>Orally describe mathematical content in language appropriate to the mathematical sciences, at introductory and in depth level.</td>
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<tr>
<td>Results of Senior Thesis will be presented to students and faculty. Evaluation by both peers, mentors and other faculty.</td>
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<tr>
<td>Discussion with senior thesis mentor and with peers who are working on related problems. Progress reports presented by the student in senior seminar.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Boise State University

Foundational Studies Review Committee: Course Application Evaluation Form

Fall 2011

Course Information

| Course Number and Title: MATH 401 Senior Thesis in the Mathematical Sciences | Number of Credits: 1 |
---|---|

Type of Foundational Studies Course (choose one)

- □ DLS (Disciplinary Lens – Social Science)
- □ DLL (Disciplinary Lens – Literature and Humanities)
- □ DLV (Disciplinary Lens – Visual and Performing Arts)
- □ DLM (Disciplinary Lens – Math)
- □ DLN (Disciplinary Lens – Natural, Physical and Applied Science)
- □ CID (Communication in the Discipline)
- ■ FF (Finishing Foundations)

Review Committee Checklist

_y_ Syllabus Statement - statement introduces the student to the purpose and role of the course in the Foundational Studies Program curriculum.

_y_ An appropriate number of Course Learning Outcomes are specified for the course and are clearly designed to support the Foundational Studies Program ULOs.

_y_ Course Learning Outcomes are appropriately designed for level of the course and address both content mastery and skill-based outcomes.

_y_ The types and numbers of assessments planned for the course are appropriate for measuring the content or skills being assessed.

_y_ Course learning activities are likely to promote the achievement of the stated outcomes.

_y_ Course design and materials have considered best practices for accessibility to course materials and ideas by all students (e.g., alternatives to auditory and visual content)

Feedback from Review Committee:

The proposed Finishing Foundations course is aimed at engaging students in writing theses effectively in areas of mathematical sciences and then presenting them orally to mathematical audiences. The proposal addresses well all four university learning outcomes: ULO 1-4.

Minor technical remark: in the course information (part 1), the course number and title are missed and “MATH 401 Senior Thesis in the Mathematical Sciences” should be written in the blank space.
Feedback from Foundational Studies Program:

Well designed course with ample attention to each ULO. It should be noted that if the department opts NOT to report on both ULO 1 and 2, that is acceptable. The basic criteria for FF courses is that they assess ULO 3 and 4 and then choose either 1 or 2. There are other FF courses that are including both ULOs 1 and 2, however, this decision can be made later.