Boise State University
Foundational Studies Program Course Application Form
Due to the Foundational Studies Program by August 19, 2011

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

Table of Contents (Click title to go to that section)

Instructions: ............................................................................................................................................................ 1
Part I. Course Information: .................................................................................................................................... 1
Part II. Syllabus Statement: .................................................................................................................................... 2
Part III. Design for Accessibility: ........................................................................................................................ 2
Part IV. Evidence of Quality Course Design: ...................................................................................................... 3
Part V. Additional Justification (Optional): .......................................................................................................... 3
Review Committee Checklist: ............................................................................................................................... 3
Feedback from Review Committee: ......................................................................................................................4
Feedback from Foundational Studies Program: ....................................................................................................4
Course Design Table ..............................................................................................................................................5

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 I. Course Information:

Course Number and Title: MATH 143 College Algebra

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)
[x] DLM (Disciplinary Lens – Mathematics)
[ ] DLN (Disciplinary Lens – Natural, Physical, and Applied Sciences)
   Includes Lab: [ ] Yes [ ] No
[ ] CID (Communication in the Discipline)
[ ] FF (Finishing Foundations)

Delivery Format(s) – (Check all that apply):
[x] Face to Face
[x] Fully Online
[ ] Hybrid
[ ] Concurrent Enrollment
[ ] Other (briefly describe):
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.)

Boise State's Foundations Program provides undergraduates with a broad-based education that spans the entire university experience. Math 143: College Algebra satisfies three credits of the Foundation Program's Disciplinary Lens-Mathematics (DL-M) requirement. It supports the following University Learning Outcomes, along with a variety of other course-specific goals.

7. Apply knowledge and the methods of reasoning characteristic of mathematics, statistics, and other formal systems to solve complex problems.

Math 143: College Algebra is designed to introduce students to the principles, techniques and applications of polynomials, exponential functions, logarithmic functions, inverse functions and composition of functions. This course helps to achieve the goals of the Foundations program by focusing on the following course learning outcomes. After successful completion of this course, you will be able to:

- Solve standard mathematical problems relating to algebraic functions including but not limited to polynomials, logarithms and exponential functions and make reasonable assessment to the accuracy of solutions.
- Convert data relating algebraic functions into appropriate graphical and symbolic representations and be able to state appropriate conclusions regarding the data with emphasis on data from science and business.
- Choose appropriate polynomial equations of degree one through four, logarithms and exponential functions to solve problems related to business and science.
- Explain why the algebraic equation is appropriate to the solution and how the solution addresses the problems questions.
- Apply mathematical strategies, both graphical and symbolic, for solving problems based in business and/or science.
- Use technology to interpret data sets from business and science to solve problems and interpret results.

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.)
MATH 143: College Algebra: 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 Disability Resource Center, located in room 114 of the Administration Building.

MATH 143: College Algebra: Online: 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 Disability Resource Center, located in room 114 of the Administration Building. If necessary, the student may use the Math Learning Center to assist in providing necessary accommodations.

Part IV. Evidence of Quality Course Design:

Please use the table below (column headings for this table should not be changed) to provide evidence that the course has been carefully designed and is clearly aligned with Foundational Studies Program desired ULOs. All sections of the course should share similar student learning outcomes. Teaching and Learning Activities and Assessment Methods may vary from instructor to instructor. Please use the table to report representative strategies that may be used. Assessment activities used for reporting to the Foundational Studies Program should be consistent across different sections of the course.

Please see below.

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.

Review Committee Checklist:

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

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

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

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

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

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) NO accessibility statement included
Feedback from Review Committee:

Overall the proposal is well done. We recommend this proposal be accepted after the developer clarifies the Assessment strategy of using “reasonable test questions”. The committee is excited to see MATH 143 be re-designed along the same lines as the MATH 108 course.

Implementing “group activities”, “POGIL activities” and “individual project” will require professional development of instructors.

Feedback from Foundational Studies Program:

Because the assessment plan is still being developed, we think it can be acceptable to include “reasonable test questions” until such time as the assessment reporting strategies are better defined. This portion of the proposal may be seen as “organic.” Disability statements (one for face to face and one for online sections) must be included prior to certification. See original course application form (link below) for disability statement language.


Revised to include accessibility statement. Certified for approval. 10/7/11

Electronically signed by Vicki Steha, Director, Foundational Studies Program
Boise State University

CERTIFIED FOR APPROVAL 10-7-2011.

Foundational Studies Program Director Signature Date
Boise State University  
Foundational Studies Course  

Course Number and Title: Math 143 College Algebra

Course Design Table

<table>
<thead>
<tr>
<th>Foundation ULO 7</th>
<th>Foundation ULO 7 Notions of Exemplary Work</th>
<th>Course Learning Outcomes: By the end of this course, each student should be able to…</th>
<th>Assessment Method: Evidence of Student Learning</th>
<th>Planned Teaching &amp; Learning Activities / Pedagogy</th>
</tr>
</thead>
</table>
| ULO 7: Application of quantitative reasoning methods | • Apply quantitative reasoning methods (regardless of context) to draw appropriate conclusions | • Solve standard mathematical problems relating to algebraic functions including but not limited to polynomials, logarithms and exponential functions and make reasonable assessment to the accuracy of solutions. | • Routine assigned problems and/or quizzes and tests | • Computer based assignments  
• Paper and pencil assignments  
• Tests |
| ULO 7: Communication of mathematical ideas through multiple representations | • Interpret and communicate (orally and visually) mathematical problem elements | • Convert data relating algebraic functions into appropriate graphical and symbolic representations and be able to state appropriate conclusions regarding the data with emphasis on data from science and business | • Observed through projects and activities.  
• Assigned problems  
• Reasonable test questions | • Group activities  
• Individual projects  
• POGIL style activities  
• Computer based assignments |
| ULO 7: Recognizing and solving problems | • Apply the appropriate strategy when solving mathematical problems | • Choose appropriate polynomial equations of degree one through four, logarithms and exponential functions to solve problems related to business and science.  
• Explain why the algebraic equation is appropriate to the solution and how the solution addresses the problems questions. | • Observed through projects and activities.  
• Assigned problems  
• Reasonable test questions | • Computer based assignments  
• Paper and pencil assignments  
• Tests  
• Group activities  
• Individual projects  
• POGIL style activities |
<table>
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<th>Foundation ULO 7 Criteria</th>
<th>Foundation ULO 7 Notions of Exemplary Work</th>
<th>Course Learning Outcomes: By the end of this course, each student should be able to…</th>
<th>Assessment Method: Evidence of Student Learning</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ULO 7: Mathematical skill and insights</td>
<td>• Analyze a problem type and apply the appropriate technique in new situations.</td>
<td>• Apply mathematical strategies, both graphical and symbolic, for solving problems based in business and/or science.</td>
<td>• Observed through projects and activities. • Assigned problems • Reasonable test questions</td>
<td>• Computer based assignments • Paper and pencil assignments • Tests • Group activities • Individual projects • POGIL style activities</td>
</tr>
<tr>
<td>ULO 7: Articulating role of technology in mathematics</td>
<td>• Select and apply appropriate technological tools and interpret the results.</td>
<td>• Use technology to interpret data sets from business and science to solve problems and interpret results.</td>
<td>• Observed through in class group activities or online individual projects</td>
<td>• Group activities • Individual projects</td>
</tr>
</tbody>
</table>