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.

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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: ECE 480 – 2 Senior Design

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

Delivery Format(s) – (Check all that apply):
[x] Face to Face
[ ] 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 Foundational Studies Program provides undergraduates with a broad-based education that spans the entire university experience. ECE 480-2 Senior Design satisfies 3 credits of the Foundational Studies Program Finishing Foundations requirements. It supports the following University Learning Outcome, along with a variety of other course-specific goals:

- Critical Inquiry (ULO 3)
- Innovation (ULO 4)

ECE 480-2 Senior Design provides a culminating capstone experience for senior Electrical and Computer Engineering majors. The course provides students the opportunity to demonstrate technical competence in the principles and practice of electrical engineering in individual and team projects. The team projects also allow students to exhibit interpersonal and organizational skills that will contribute to their overall professional success. The senior design series also encourages students to practice electrical engineering using the highest standards of ethical and professional responsibility and to strive for continuous professional development by improving knowledge and skills appropriate to each chosen career path and by managing increasingly complex contemporary issues, products, and systems. This course helps to achieve the goals of the Foundational Studies Program by focusing on the following course learning outcomes. After successful completion of this course, you will be able to:

- plan a design project within a specified time and a specified budget
- write and present a technical design report
- search on patents and write them
- ethically judge situations that might arise in work place
- write a professional resume and conduct a job interview
- learn about statistical process control
- define a project based on an understanding of the customer’s needs
- set objectives for the project requirement specifications and constraints or requirements
- evaluate alternative strategies for achieving the objectives
- outline a specific strategy with a plan of action by listing tasks and priorities, scheduling tasks, and assigning responsibilities
- conduct a scientific literature search from several sources
- work in a team environment
- identify risk factors and know how to manage them
- write and present a mini-proposal
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.)

All posted PDF reading assignments will be checked for readability by a screen reader. The Department may also seek the assistance of Academic Technologies in reviewing electronic materials. Whenever possible, videos chosen for use in the course will be those that have been close-captioned by the content producer to provide access to students with hearing impairment. PowerPoint presentations that contain graphs or other visual content should be referenced and explained in text; these items may also be verbally described to students on an as-needed basis. Extra time on tests, oral examinations, or other accommodations will be provided to students as needed per the policies of the Disability Resource Center. In addition, web content will adhere to U.S. Federal Government Section 508 Guidelines and follow priorities 1 & 2 of the W3C Web Content Accessibility Guidelines. All static pages validate as HTML 4.01 Transitional.

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.

See attached document, ECE 480-2 Course Design 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.

N/A
## Boise State University
### Foundational Studies Course
Course Number and Title: **ECE 480-2 Senior Design**

## Course Design Table

<table>
<thead>
<tr>
<th>Foundation ULO Criteria</th>
<th>Foundation ULO</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 3.1 - Critical Inquiry | Articulating the Problem/Question/Issue | Identify and describe problems and explain how it fits within the sphere of inquiry; describe multiple possible approaches to addressing problems. | • Students conduct research that integrates previous design work with design theory and methodology. They then write a report and present their findings to their peers.  
• Student teams work with industry sponsors to evaluate and design a project within the parameters specified by sponsors. Project update presentations occur regularly throughout the semester. | • Group activities designed to aid students in the discovery of contemporary issues in electrical engineering.  
• Group project that integrates specifications based upon customer and engineering requirements, computer modeling, simulation, and reliability analysis.  
• Project reports, formal presentations, and a final written report. |
| ULO 3.2 - Critical Inquiry | Collecting and Organizing Evidence/Data/Reasons | Adhere to and clearly explain best practices with respect to thoroughness and accuracy of data collection. | • Students conduct research that integrates previous design work with design theory and methodology. They then write a report and present their findings to their peers.  
• Student teams work with industry sponsors to evaluate and design a project within the parameters specified by sponsors. Project update presentations occur regularly throughout the semester. | • Group activities designed to aid students in the discovery of contemporary issues in electrical engineering.  
• Group project that integrates specifications based upon customer and engineering requirements, computer modeling, simulation, and reliability analysis.  
• Project reports, formal presentations, and a final written report. |
<table>
<thead>
<tr>
<th>Foundation ULO</th>
<th>Foundation ULO 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 3.3 - Critical Inquiry | Evaluative Reasoning | Accurately diagnose failures of reasoning and clearly distinguish reasoning quality according to evaluative standards specific to Computer Science. | • Students observe, evaluate, and report on the reports of fellow students and invited guests. Reports are assessed according to content (including thesis support, organization, and accuracy), quality reasoning, effectiveness of presentation, and mechanics.  
• Project requirement  
• Team projects examine constraint requirements, evaluate alternative strategies for achieving objectives, and require students formulate a specific strategy with a plan of action by listing tasks and priorities, scheduling tasks, and assigning responsibilities. | • Learning teams use CRAAP test activity used to help evaluate the timeliness, depth, importance, source, reliability, and possible biases of information.  
• Participation in activities, attendance of seminars, and participation in workshops that develop skills used in the engineering profession: teamwork, effective meetings, safety, ethics, project management, and time management. |
| ULO 3.4 - Critical Inquiry | Demonstrative Reasoning | Make effective use of evidence and principles to produce chains of reasoning that are of superior quality. | • Students observe, evaluate, and report on the reports of fellow students and invited guests. Reports are assessed according to content (including thesis support, organization, and accuracy), quality reasoning, effectiveness of presentation, and mechanics.  
• Project requirement  
• Team projects examine constraint requirements, evaluate alternative strategies for achieving objectives, and require students formulate a specific strategy with a plan of action by listing tasks and priorities, scheduling tasks, and assigning responsibilities. | • Learning teams use CRAAP test activity used to help evaluate the timeliness, depth, importance, source, reliability, and possible biases of information.  
• Participation in activities, attendance of seminars, and participation in workshops that develop skills used in the engineering profession: teamwork, effective meetings, safety, ethics, project management, and time management. |