

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF AN UNDERGRADUATE COURSE
(10000-40000 LEVEL)

Print Form

EFD 81-07

DEPARTMENT School of Electrical and Computer Engineering (EFD 81-07) EFFECTIVE SESSION Fall 2010

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- | | |
|---|---|
| <input checked="" type="checkbox"/> 1. New course with supporting documents | <input type="checkbox"/> 7. Change in course attributes (department head signature only) |
| <input type="checkbox"/> 2. Add existing course offered at another campus | <input type="checkbox"/> 8. Change in instructional hours |
| <input type="checkbox"/> 3. Expiration of a course | <input type="checkbox"/> 9. Change in course description |
| <input type="checkbox"/> 4. Change in course number | <input type="checkbox"/> 10. Change in course requisites |
| <input type="checkbox"/> 5. Change in course title | <input type="checkbox"/> 11. Change in semesters offered (department head signature only) |
| <input type="checkbox"/> 6. Change in course credit/type | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED:	EXISTING:
Subject Abbreviation <u>ECE</u>	Subject Abbreviation _____
Course Number <u>27900</u>	Course Number _____
Long Title <u>Sophomore Participation in Vertically Integrated Projects (VIP) in Electrical and Computer Engineering</u>	_____
Short Title <u>Soph Part in VIP in ECE</u>	_____

TERMS OFFERED
Check All That Apply:

Summer Fall Spring

CAMPUS(ES) INVOLVED

Calumet
 Cont Ed
 Ft. Wayne
 Indianapolis

N. Central
 Tech Statewide
 W. Lafayette

Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)

CREDIT TYPE

1. Fixed Credit: Cr. Hrs. _____

2. Variable Credit Range:
Minimum Cr. Hrs. 1
(Check One) To Or
Maximum Cr. Hrs. 2

3. Equivalent Credit: Yes No

COURSE ATTRIBUTES: Check All That Apply

1. Pass/Not Pass Only

2. Satisfactory/Unsatisfactory Only

3. Repeatable

Maximum Repeatable Credit: _____

4. Credit by Examination

5. Special Fees

6. Registration Approval Type
Department Instructor

7. Variable Title

8. Honors

9. Full Time Privilege

10. Off Campus Experience

Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated
Lecture	50	1	16	100
Recitation				
Presentation				
Laboratory	X			
Lab Prep				
Studio				
Distance				
Clinic				
Experiential				
Research				
Ind. Study				
Pract/Observ				

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
See attachment

Calumet Department Head _____ Date _____	Calumet School Dean _____ Date _____
Fort Wayne Department Head _____ Date _____	Fort Wayne School Dean _____ Date _____
Indianapolis Department Head _____ Date _____	Indianapolis School Dean _____ Date _____
North Central Department Head _____ Date _____	North Central Chancellor _____ Date _____
West Lafayette Department Head _____ Date <u>12/30/09</u>	West Lafayette College/School Dean _____ Date <u>2/27/2010</u>
	West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

5/28/10
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Course Number <u>27900</u>	Course Number _____
Long Title <u>Sophomore Participation in Vertically Integrated Projects (VIP) in Electrical and Computer Engineering</u>	_____
Short Title <u>Soph Part in VIP in ECE</u>	_____

Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)

TERMS OFFERED
Check All That Apply:

Summer Fall Spring

CAMPUS(ES) INVOLVED

Calumet
 Cont Ed
 Ft. Wayne
 Indianapolis

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 Tech Statewide
 W. Lafayette

CREDIT TYPE	COURSE ATTRIBUTES: Check All That Apply
1. Fixed Credit: Cr. Hrs. _____	1. Pass/Not Pass Only <input type="checkbox"/>
2. Variable Credit Range: Minimum Cr. Hrs. <u>1</u>	2. Satisfactory/Unsatisfactory Only <input type="checkbox"/>
(Check One) To <input checked="" type="checkbox"/> Or <input type="checkbox"/>	3. Repeatable <input checked="" type="checkbox"/>
Maximum Cr. Hrs. <u>2</u>	Maximum Repeatable Credit: _____
3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>	4. Credit by Examination <input type="checkbox"/>
	5. Special Fees <input type="checkbox"/>
	6. Registration Approval Type Department <input type="checkbox"/> Instructor <input type="checkbox"/>
	7. Variable Title <input type="checkbox"/>
	8. Honors <input type="checkbox"/>
	9. Full Time Privilege <input type="checkbox"/>
	10. Off Campus Experience <input type="checkbox"/>

Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated
Lecture	50	3	16	100
Recitation	_____	_____	_____	_____
Presentation	_____	_____	_____	_____
Laboratory	_____	_____	_____	_____
Lab Prep	_____	_____	_____	_____
Studio	_____	_____	_____	_____
Distance	_____	_____	_____	_____
Clinic	_____	_____	_____	_____
Experiential	_____	_____	_____	_____
Research	_____	_____	_____	_____
Ind. Study	_____	_____	_____	_____
Pract/Observ	_____	_____	_____	_____

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COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

See attachment

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North Central Department Head _____ Date _____	North Central Chancellor _____ Date _____
West Lafayette Department Head <u>[Signature]</u> <u>12/30/09</u> Date _____	West Lafayette College/School Dean <u>[Signature]</u> <u>2/27/2010</u> Date _____
	West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

TO: The Engineering Faculty
FROM: The Faculty of the School of Electrical and Computer Engineering
RE: New Undergraduate Level Course: ECE 279

The faculty of the School of Electrical and Computer Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ECE 279 Sophomore Participation in Vertically Integrated Projects (VIP) in Electrical and Computer Engineering

Sem: 1 and 2. Class: 1; Lab: 0 or 1; Credit: 1 or 2.

Prerequisite: Sophomore Standing in Engineering.

This course provides an opportunity for undergraduate students to explore and develop comprehensive applications of electrical and computer engineering technologies, especially as they relate to active research areas of Purdue faculty members. Students will learn about the underlying research, and will work on teams to formulate applications of the research that address real-world needs. Students will attend a weekly lecture that provides an introduction to a broad range of applicable technologies and development tools – some associated with the activities of specific teams, and some addressing topics of more general value to students enrolled in the course.

Reason: This course will provide an opportunity for students to apply the concepts that they are learning in their classes to the solution of real-world problems that are aligned with the research interests of Purdue faculty members. It provides a structured environment for design activities that engage students in team-work under the guidance of faculty members and graduate students. Presently, there is no course offering within ECE that provides this opportunity. The most similar courses are those associated with EPICS; but in contrast to EPICS, VIP focuses on design tasks related to research issues and research applications, rather than providing technology solutions to community needs.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE

Mark J. T. Smith
Professor and Head

ECC Minutes #14
Date 1-22-10
Chairman ECC R. C. Pina

Supporting Documentation

Required Text: None.

Recommended References: None.

Course Outcomes: A student who successfully fulfills the course requirements will have demonstrated:

- i. an ability to apply knowledge of electrical and computer engineering to the design of applications solutions.. [1,3,4,5,7;a,b,c,l,k]
- ii. an understanding of design as a start-to-finish process.. [3,4;b,c,e,k]
- iii. an awareness of the customer in engineering design.. [6,7;c,f,g,h,j]
- iv. an ability to function as part of a team and an appreciation for the contributions of other individuals on the team.. [6;d,f,g,h]
- v. an ability to communicate effectively with both technical and non-technical audiences.. [6;d,g]

Assessment of Outcomes: Each student will be required to keep his or her own design notebook. Students will be evaluated individually and as part of their team on the basis of their design notebooks, midterm and final design presentations, homework assignments that will be collected and graded, and final oral examinations conducted by faculty team advisors.

Lecture Outline:**Weeks Lectures**

1-15 All students in VIP have one common lecture hour each week. During this hour, students will attend lectures that address a broad range of electrical and computer engineering technologies including topics that are relevant to the team projects and the development of applications based on these technologies. Lectures also address good design principles, project management, and project communications.

Lab Outline:**Week Major course milestones**

2	Team Organization and Semester Planning
3	Personal Semester Goals
4	Project Proposal (new projects); Project Demonstration (continuing projects)
5	Review of Design Notebooks
8	Peer Evaluation and Self Assessment
9	Progress Report
11	Midterm Project Review
15	Final Project Presentation, Team Report; Review of Design Notebooks; Peer Evaluation and Self Assessment

Additional Information:

Lectures will be drawn from a pool of 36 different lectures; so students can register for VIP courses as many as three times and still see new lecture material each semester. Together, the VIP courses in ECE create a vertical project track under which students work in multidisciplinary teams on long-term engineering projects. Each team consists of a mix of sophomores, juniors, and seniors. Projects of at least one year in duration are intended to solve real problems that are defined in consultation with advisors who are Purdue faculty members, graduate students, or representatives of industry or the end-user population. Students are encouraged to participate in a VIP team for two or more semesters. Projects that serve customers from community service or educational organizations will be conducted within the EPICS framework rather than VIP.

School of Electrical and Computer Engineering (EFD 81-07)

Description: This course provides an opportunity for undergraduate students to explore and develop comprehensive applications of electrical and computer engineering technologies, especially as they relate to active research areas of Purdue faculty members. Students will learn about the underlying research, and will work on teams to formulate applications of the research that address real-world needs. Students will attend a weekly lecture that provides an introduction to a broad range of applicable technologies and development tools – some associated with the activities of specific teams, and some addressing topics of more general value to students enrolled in the course.

Restrictions: Must be enrolled in the School of Electrical and Computer Engineering

Prerequisites: Sophomore standing

