Office of the Registrar
FORM 40 REV. 7/08

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

Print Form

EFD 83-07

DEPARTMENT School of Electrical and Computer Engineering (EFD 83-07) EFFECTIVE SESSION Fall 2010

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

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

PROPOSED:		EXISTING:	
Subject Abbreviation	ECE	Subject Abbreviation	
Course Number	47900	Course Number	

Long Title: Senior Participation in Vertically Integrated Projects (VIP) in Electrical and Computer Engineering

Short Title: Senior Part in VIP in ECE

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

TERMS OFFERED
Check All That Apply:
[ ] Summer [X] Fall [X] Spring

CAMPUS(ES) INVOLVED
[ ] Calumet [ ] N. Central
[ ] Cont Ed [ ] Tech Statewide
[ ] Ft. Wayne [X] W. Lafayette
[ ] Indianapolis

CREDIT TYPE
1. Fixed Credit: Cr. Hrs.
2. Variable Credit Range:
Minimum Cr. Hrs: 1
(Check One) To [X] Or [ ]
Maximum Cr. Hrs. 2
3. Equivalent Credit: Yes [ ] No [ ]

COURSE ATTRIBUTES: Check All That Apply

1. Pass/Not Pass Only		6. Registration Approval Type	
2. Satisfactory/Unsatisfactory Only		Department	[ ] Instructor [ ]
3. Repeatable	[X]	7. Variable Title	[ ]
Maximum Repeatable Credit:	[ ]	8. Honors	[ ]
4. Credit by Examination	[ ]	9. Full Time Privilege	[ ]
5. Special Fees	[ ]	10. Off Campus Experience	[ ]

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

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
See attachment

	Date		Date
Calumet Department Head		Calumet School Dean	
Fort Wayne Department Head		Fort Wayne School Dean	
Indianapolis Department Head		Indianapolis School Dean	
North Central Department Head		North Central Chancellor	
West Lafayette Department Head	12/30/09	West Lafayette College/School Dean	2/22/2010
		West Lafayette Registrar	3/12/10

OFFICE OF THE REGISTRAR

3/12/10

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PROPOSED:		EXISTING:	
Subject Abbreviation	ECE	Subject Abbreviation	
Course Number	47900	Course Number	
Long Title	Senior Participation in Vertically Integrated Projects (VIP) in Electrical and Computer Engineering		
Short Title	Senior Part in VIP in ECE		

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

TERMS OFFERED
Check All That Apply:
[ ] Summer [X] Fall [X] Spring

CAMPUS(ES) INVOLVED
[ ] Calumet [ ] N. Central
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2. Variable Credit Range:
Minimum Cr. Hrs 1
(Check One) To [X] 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 [X]
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 [ ]

ScheduleType	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated
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Laboratory				
Lab Prep				
Studio				
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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
Lafayette Department Head 12/30/09	Date	West Lafayette College/School Dean 2/22/2010	Date
		West Lafayette Registrar	Date

OFFICE OF THE REGISTRAR

School of Electrical and Computer Engineering (EFD 83-07)

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: Senior standing

Engineering Faculty Document No. 83-07
April 4, 2008

TO: The Engineering Faculty
FROM: The Faculty of the School of Electrical and Computer Engineering
RE: New Undergraduate Level Course: ECE 479

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 479 **Senior Participation in Vertically Integrated Projects (VIP) in Electrical and Computer Engineering**
Sem: 1 and 2. Class: 1; Lab: 0 or 1; Credit: 1or 2.
Prerequisite: Senior 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.

Mark J. T. Smith
Professor and Head

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

ECC Minutes #14

Date 1-22-10

Chairman ECC R. Cipra

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 communications, signal processing, and computer engineering to the design of applications solutions.. [1,2,3,4,5,7;a,b,c,e,I,j,k]
ii. an understanding of design as a start-to-finish process.. [3,4,6,7;b,c,e,f,h,k]
iii. an awareness of the customer in engineering design and professional and ethical responsibility.. [6,7;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.. [6,7;d,f,g,h,j]
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.