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Office of the Registrar
FORM 40 REV. 2/99

PURDUE UNIVERSITY
REQUEST FOR ADDITION, DELETION, OR REVISION OF A COURSE

SCHOOL DOCUMENT NO. EFD83-0(

GRADUATE COUNCIL DOCUMENT NO. 01-23a

DEPARTMENT Electrical & Computer Engineering DATE SUBMITTED 8/20/2001 DATE EFFECTIVE ~~8/20/2001~~ Spring 2003

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

PURPOSE

[ ] 1.	Deletion of a course	[ ] 8.	Change in semesters offered
[✓] 2.	New course with supporting documents	[ ] 9.	Change in course credit/type
[ ] 3.	Add existing course offered at another campus	[ ] 10.	Change in course attributes
[ ] 4.	Change in course number at same level	[ ] 11.	Change in instructional hours
[ ] 5.	Downgrading of course level	[ ] 12.	Change in prerequisites
[ ] 6.	Upgrading of course level	[ ] 13.	Change in description of course content
[ ] 7.	Change in course title	[ ] 14.	Transfer of course from one dept. to another

EXISTING:

Subject Abbreviation
Course Number

PROPOSED:

Subject Abbreviation EE ECE
Course Number 612

Proposed Title Advanced VLSI Devices
Variable Title Yes [ ] No [✓]

Abbreviated Title Advanced VLSI Devices
Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

SEMESTERS OFFERED
Check All That Apply.

Summer	Fall	Ag Winter	Spring
[ ]	[ ]	[ ]	[✓]

CROSS LISTED COURSES

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

COURSE ATTRIBUTES: Check All That Apply.

1.	Pass/Not Pass Only	[ ]
2.	Repeatable for Credit	[ ]
3.	Available for Credit by Examination	[ ]
4.	Designator Required	[ ]
5.	Special Fees	[ ]
6.	Approval Required for Enrollment	[ ]
	Department	[ ]
	Instructor	[ ]

Instructional Type	Class Hours	FTE	Instructional Type	Class Hours	FTE	Instructional Type	Class Hours	FTE
Primary	3		Auto-tutorial			Thesis		
Secondary			Ind. Study			Observation		
Laboratory			Clinic			Matls Based		
Lab. Prep.			Experiential					

CAMPUS(ES) INVOLVED

Calumet	[ ]
Fort Wayne	[ ]
Indianapolis	[ ]
North Central	[ ]
West Lafayette	[✓]
Off Campus	[ ]

COURSE DESCRIPTION (PREREQUISITES INCLUDED):

Prerequisite: EE 606 or equivalent.
Device physics of advanced transistors. Process, device, circuit, and systems considerations affecting development of new integrated circuit technologies. Review of metal oxide semiconductor (MOS) fundamentals along with key process and circuit concepts. Short channel effects in sub-micron channel length metal oxide semiconductor field-effect transistors (MOSFETs) including device scaling considerations. Device physics and technology issues for sub-100 nm (nanoscale) MOSFETs. Limits of silicon device technology and key issues in the continuing miniaturization of devices. Alternative device structures to replace bulk MOSFET. Computer simulation employed throughout course to examine device issues and prototype new device technologies.
Professor Lundstrom. the

Calumet Undergrad Curriculum Committee	Date	Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date	Fort Wayne Chancellor C.D. Sutton	Date
				Appr.for Faculty C,D.Sutton,Chair	#949 9/5/01
Indianapolis Department Head	Date	Indianapolis School Dean	Date	Undergrad Curriculum Committee	Date
				APPROVED 11/15/01	
North Central Department Head	Date	North Central Vice Chancellor	Date	Date Approved by Graduate Council	
K. Kelly 8/17/2001		L. D. Duggin 6 Sept 01		Marilyn D. Hirst 6/4/02	
West Lafayette Department Head	Date	West Lafayette School Dean	Date	Graduate Council Secretary	Date
R. Bhargava 11/15/01				Debra Sheets 7/5/02	
Graduate Area Committee Convener	Date	Graduate Dean	Date	West Lafayette Registrar	Date

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