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PROPOSAL NUMBER: 99-113X

CURRICULUM PROPOSAL FORM

***DEADLINES:**

REGULAR COURSE PROPOSALS: OCTOBER 23, 1998 FOR FALL, 1999 AND FEBRUARY 19, 1999 FOR SPRING, 2000
SHORT-TERM COURSE PROPOSALS: DECEMBER 11, 1998 FOR FALL, 1999 AND MARCH 26, 1998 FOR SPRING 2000

PROPOSAL TITLE: Electronics II (0909.312)

SPONSOR/S: L. Head J. Schmalzel

DEPARTMENT: Electrical Engineering 0909.312

CHECK ALL THAT APPLY:
 UNDERGRADUATE GRADUATE

COLLEGE: _____
 If LAS: History/Humanities
 Math/Sciences
 Social/Behavioral Sciences

TYPE OF PROPOSAL (Check ALL that Apply)

<input type="checkbox"/> General Education	<input checked="" type="checkbox"/> New Course (NOT Gen. Ed.)
<input type="checkbox"/> New Course in _____ Bank	<input type="checkbox"/> Name Change (Dept., School, Major)
<input type="checkbox"/> Existing course, Add To _____ Bank	<input type="checkbox"/> Changes in Degree Requirements
<input type="checkbox"/> Multicultural/Global Designation	<input type="checkbox"/> Changes Involve Gen. Ed. requirements
<input type="checkbox"/> Writing Intensive Designation	<input type="checkbox"/> Minor Changes to Existing Courses
<input type="checkbox"/> New Minor/Concentration/Specialization	<input type="checkbox"/> Course is NOT General Education
<input type="checkbox"/> New Major/Degree Program	<input type="checkbox"/> Course IS General Education
<input type="checkbox"/> Short Term Course Proposal	

DEPARTMENT (SIGNATURE INDICATES APPROVAL)

Ravi Prakash Rameshchandra 10/23/98 [Signature]

DEPT. CURRICULUM CHAIR / DATE DEPT. CHAIRPERSON / DATE

COLLEGE CURRICULUM COMMITTEE

DATE OF OPEN HEARING (if necessary) 11/5/98

APPROVED
 NOT APPROVED

Comments:
[Signature] 11/5/98

SIGNATURE DATE

ACADEMIC DEAN (& GRADUATE DEAN, for New Graduate Programs Only)

APPROVED
 NOT APPROVED

Comments:
[Signature] 10/23/98

SIGNATURE (Academic Dean) DATE

SIGNATURE (Graduate Dean) DATE

UNIVERSITY CURRICULUM COMMITTEE

DATE OF OPEN HEARING (if necessary) College level only

APPROVED

NOT APPROVED

Comments:

Review 11/5/98
SIGNATURE DATE

SENATE

Date announced at Senate 11/6/98

Voted upon at Senate: _____ Approved _____ Not Approved _____ Date: _____

EXECUTIVE VICE PRESIDENT/PROVOST

APPROVED

NOT APPROVED If no, reasons are as follows:

STUDENT CREDIT HOURS _____ FACULTY LOAD HOURS _____ EQUALIZED CREDIT HOURS _____

OFFICIAL COPY & APPROVAL SHEET FILED (DATE): _____

DATE/SIGNATURE EXECUTIVE VICE PRESIDENT/PROVOST _____

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 11/9/98

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED 0409.317

DATE/SIGNATURE OF REGISTRAR Robert A. Kubot 11/9/98

NOTIFICATION FORWARD:

SENATE CURRICULUM COMMITTEE CHAIRPERSON

DEPARTMENT CHAIRPERSONS

ACADEMIC DEAN(S)

REGISTRAR

SPONSOR(S)

1. Details:

- ✓a) Course Title: Electronics II (0909 312)
 b) Sponsor: Dr. Linda M. Head, Dr. John L. Schmalzel and Electrical Engineering curriculum committee
 c) Credit Hours: 3 credit hours
 ✓d) Course Level: Junior 2
 e) Curricular Effect: Required course for electrical engineering majors
 ✓f) Prerequisites: Electronics I (0909 311)
 ✓g) Suggested Time/Scale of Implementation: Spring 1999
 h) Resources: One section
 Faculty will be hired and laboratory equipment obtained consistent with Engineering School multi-year budget. Library acquisitions will be required.

2. Rationale:

The proposed course is a revision to part of the Engineering Curriculum Proposal approved by the College Senate in December, 1994. The proposed course is consistent with the establishment of the School of Engineering approved by the Board of Trustees in February, 1995.

Students will continue their investigation of the operation of the components that constitute the building blocks of electronic devices: diodes, transistors, and operational amplifiers. This course will expand upon the applications in which these devices are used and introduce Very Large Scale Integration (VLSI) circuit design and layout with a focus on Complementary Metal Oxide Semiconductor (CMOS) technology. CMOS technology is extremely important for microprocessor design and is used extensively in Application Specific Integrated Circuit (ASIC) design. There is a great need in industry for porting complex analog/digital designs down to the monolithic or integrated circuit level. This task can be efficiently accomplished by mixing analog and digital CMOS IC processes on the same chip. Thus, CMOS technology and circuit applications are important to electrical engineering practice. Experiments in the laboratory will complement and supplement the theory taught in class.

3. Essence of the Course:**a) Objectives:**

The proposed course has a number of objectives:

- (i) Review basics of electronic circuit analysis and design.
- (ii) Review operational fundamentals of diodes, transistors, and op-amps.
- (iii) Introduce basic CMOS components and circuits.
- (iv) Provide understanding and working knowledge of process technology and device/circuit layout techniques.
- (v) Provide knowledge of CMOS implementation of fundamental logic circuits.
- (vi) Develop ability to design and simulate CMOS logic circuits.
- (vii) Introduce CMOS system design methods and testing strategies.

b) Topical Outline:

- Review of two and three-terminal nonlinear devices
- Analog amplification, frequency response and time-dependent circuit behavior
- Introduction to analog and digital integrated circuits
- Overview of CMOS logic design and design representations and the theory of operation of the MOS transistor