REQUEST FOR CHANGE IN UNDERGRADUATE PROGRAM

FEB 1 0 2004

Program BSEE

Formal Option _____ (if applicable) Or Specialty Field _____ (if applicable)

Department (if applicable) Electrical and Computer Engineering

College (if applicable) Engineering

Degree title BSEE _____ Bulletin PP 150-151

CIP Code UK ID No. HEGIS Code

Accrediting Agency (if applicable) ABET

PROPOSED CHANGE(S) IN PROGRAM REQUIREMENTS

Particular University Studies Requirements or Recommendations for this program

	Current	Proposed
English Writing	NONE	
Communication		
Mathematics		
Area I (Natural Science)		
Area II (Social Science)		
Area III (Humanities)		
Area IV (Cross-disciplinary component)		
Area V (Non-western cultural component		

College Depth and Breadth of Study Requirements (if applicable) (including particular courses required or recommended for this program) NOTE: To the extent that proposed changes in 2 through 6 involve additional courses offered in another program, please submit correspondence with the program(s) pertaining to the availability of such courses to your students.

Current	Proposed
N/A	

Premajor or Preprofessional Course Requirements (if applicable)

Current	Proposed
N/A	

Total Hours

8. List below the typical semester by semester program for a major.

Current	Proposed
See Attached	See Attached

Will this program be printed in the Bulletin? ☑ Yes ☐ No

Signatures of Approval

Department Chair — Date 6/6/03

Dean of the College — Date 10/6/03

Vote by Department Faculty 11 Favor 0 Against 1 Abstain — Date of Notice to the Faculty 5/9/03

*Undergraduate Council — Date 2/4/2004

*University Studies — Date

*Graduate Council — Date

Academic Council for the Medical Center — Date

Senate Council — Date of Notice to University Senate

*If applicable, as provided by the Rules of the University Senate

ACTION OTHER THAN APPROVAL

Rev 11/98

Current curriculum (4/18/03)

Freshman Year	
First Semester	**Hrs**
EE 101 EE Professions Seminar	1
MA 113 Calculus I	4
CHE 105 General College Chemistry I	3
CS115 Introduction to Computer Programming	3
ENG 101 Writing I	3
University Studies (1)*	3
Total	**17**
Second Semester	
MA 114 Calculus II	4
PHY 231 General University Physics	4
PHY 241 General University Physics Lab	1
ENG 102 Writing II	3
University Studies (Oral Com) (2)*	3
Total	15

Sophomore Year	
First Semester	**Hrs**
MA 213 Calculus III	4
PHY 232 General University Physics	4
PHY 242 General University Physics Lab	1
EE 211 Circuits I	4
EE 280 Design of Logic Circuits	3
Total	**16**
Second Semester	
MA 214 Calculus IV	3
EE 221 Circuits II	3
EE 222 EE Laboratory I	2
EE 360 Introduction to Semiconductor Devices	3
Engineering/Science Elective (A)[2]	3
University Studies (3)*	3
Total	**17**

Junior Year	
First Semester	
EE 415G Electromechanics	3
EE 421G Signals and Systems I	3
EE 416G Energy Conversion Laboratory **or** EE 481 Logical Design Laboratory	2
EE 461G Introduction to Electronics	3
EE 380 Computer Organization	3
Mathematics Selection [1]	3
Total	**17**
Second Semester	**Hrs**
EE 422 Signals and Systems II	3
EE462G Electronic Circuits Laboratory	2
EE 468G Fields and Waves	4
Engineering/Science Elective (A/B)[2]	3
Engineering/Science Elective (B)[2]	3
University Studies (4)	3
Total	**18**

Senior Year	
First Semester	**Hrs**
Technical Elective [3]	3
Engineering/Science Elective (A/B)[2]	3
EE Technical Elective**	3
EE Technical Elective**	3
University Studies (5)*	3
Total	**15**
Second Semester	**Hrs**
EE 499 Electrical Engineering Design	3
EE Technical Elective**	3
EE Technical Elective**	3
Supportive Elective***	3
University Studies (6)*	3
Total	**15**
Program Total	**130**

Proposed Curriculum (4/18/03)

Proposed new curriculum to broaden elective choices for students

Freshman Year	
First Semester	**Hrs**
EE 101 EE Professions Seminar	1
MA 113 Calculus I	4
CHE 105 General College Chemistry I	3
CS115	3
ENG 101 Writing I	3
University Studies (1)*	3
Total	**17**
Second Semester	
MA 114 Calculus II	4
PHY 231 General University Physics	4
PHY 241 General University Physics Lab	1
ENG 102 Writing II	3
University Studies (Oral Comm.)(2)*	3
Total	15

Sophomore Year	
First Semester	**Hrs**
MA 213 Calculus III	4
PHY 232 General University Physics	4
PHY 242 General University Physics Lab	1
EE 211 Circuits I	4
University Studies (3)*	3
Total	**16**
Second Semester	
MA 214 Calculus IV	3
EE 221 Circuits II	3
EE 222 EE Laboratory I	2
Engineering/Science [E] (1)	**3**
EE 280 Design of Logic Circuits	3
University Studies (4)*	3
Total	**17**

Junior Year	
First Semester	
EE 415G Electromechanics	3
EE360 Intro to Semiconductor Dev.	3
EE 421G Signals and Systems I	3
EE416G Energy Conversion Laboratory **or** EE 481 Logical Design Laboratory	2
EE 380 Computer Organization	3
MA 320 Probability	**3**
Total	**17**
Second Semester	**Hrs**
EE 461G Introduction to Electronics	3
Engineering/Science Elective [E] (2)	**3**
EE 468G Fields and Waves	4
EE462G Electronic Circuits Laboratory	2
EE 422 Signals and Systems II	3
Total	**15**

Senior Year	
First Semester	**Hrs**
Technical Elective [3] (1)	3
Math/Statistics Elective [M]	**3**
EE Technical Elective**	3
EE Technical Elective**	3
University Studies (5)*	3
Engineering/Science Elective [E] (3)	**3**
Total	**18**
Second Semester	**Hrs**
EE 499 Electrical Engineering Design	3
EE Technical Elective**	3
EE Technical Elective**	3
Supportive Elective***	3
University Studies (6)*	**3**
Total	**15**
Program Total	**130**

Proposed Curriculum (4/18/03)

*To be selected from **University Studies** areas in Social Sciences, Oral Communication, Humanities, and Cross-Cultural in consultation with the academic adviser.

***Supportive elective** is to be chosen from any University courses, excluding more elementary versions of required courses, such as precalculus mathematics or PHY 211.

[M] **Math Statistics Elective**: Any upper-division (300-level or higher) math or statistics course (3 credit hours total).

[E]**Engineering/Science Electives:** Any engineering, science, computer science, or math course more at the 200-level or higher other than an Electrical Engineering course (9 credit hours total).

[T]**Technical elective** may be selected from upper division engineering, mathematics, statistics, computer science, physics, or other technically-related fields in consultation with the academic adviser (3 credit hours total).

****EE Technical Electives:** Courses recommended as electrical engineering technical electives are listed below (each course is worth 3 Hours).
EE 511 Introduction to Communication Systems
EE 512 Digital Communication Systems
EE 517 Advanced Electromechanics
EE 518 Electric Drives
EE 522 Antenna Design
EE 523 Microwave Circuit Design

EE 524 Solid State Physics

EE 525 Numerical Methods and Electromagnetics
EE 527 Electromagnetic Compatibility
EE 537 Electric Power Systems I
EE 538 Electric Power Systems II
EE 560 Semiconductor Device Design
EE 561 Electric and Magnetic Properties of Materials
EE 562 Analog Electronic Circuits
EE 564 Digital Electronic Circuits
EE 565 Circuit Design With Analog Integrated Circuits
EE 567 Introduction to Lasers and Masers
EE 568 Fiber Optics

EE 569 Electronic Packaging Systems and Manufacturing Processes
EE 571 Feedback Control Design
EE 572 Digital Control of Dynamic Systems
EE 581 Advanced Logical Design

EE 582 Hardware Description Languages and Programmable Logic
EE 583 Microprocessors

EE 584 Introduction of VLSI Design and Testing
EE 585 Fault Tolerant Computing

EE 586 Communication and Switching Networks
EE 587 Microcomputer Systems Design
EE 599 Topics in Electrical Engineering (subtitle required)

Current curriculum (4/18/03)

*To be selected from **University Studies** areas in Social Sciences, Oral Communications, Humanities, and Cross-Cultural in consultation with the academic adviser.

***Supportive elective** is to be chosen from any University courses, excluding more elementary versions of required courses, such as precalculus mathematics or PHY 211.

[1]**Math Elective**, any course from the list below:
MA320 Introductory Probability
MA321 Introduction to Numerical Methods
MA322 Matrix Algebra and Applications

[2]**Engineering/Science Electives:** to be chosen in consultation with the academic adviser from
Group A:
ME 220 Engineering Thermodynamics I
EM 221 Statics
ME 330 Fluid Mechanics
EM 313 Dynamics
Group B:
CS 215 Introduction to Program Design, Abstraction, and Problem Solving
CS 216 Introduction to Software Engineering
CS 315 Algorithm Design and Analysis
PHY 308 Principles of Optics
PHY 361 Principles of Modern Physics
MA 432G Methods of Applied Mathematics
MA 433G Introduction to Complex Variables

[3]The **technical elective** may be selected from upper division engineering, mathematics, statistics, computer science, physics, or other technically-related fields in consultation with the academic adviser.

****EE Technical Electives:** Courses recommended as electrical engineering technical electives are listed below (each course is worth 3 Hours).
EE 511 Introduction to Communication Systems
EE 512 Digital Communication Systems
EE 517 Advanced Electromechanics
EE 518 Electric Drives
EE 522 Antenna Design
EE 523 Microwave Circuit Design
EE 524 Solid State Physics
EE 525 Numerical Methods and Electromagnetics
EE 527 Electromagnetic Compatibility
EE 530 Robotics
EE 537 Electric Power Systems I
EE 538 Electric Power Systems II
EE 560 Semiconductor Device Design
EE 561 Electric and Magnetic Properties of Materials
EE 562 Analog Electronic Circuits
EE 564 Digital Electronic Circuits
EE 565 Circuit Design With Analog Integrated Circuits
EE 567 Introduction to Lasers and Masers
EE 568 Fiber Optics
EE 571 Feedback Control Design
EE 572 Digital Control of Dynamic Systems
EE 581 Advanced Logical Design
EE 582 Hardware Description Languages and Programmable Logic
EE 583 Microprocessors
EE 584 Introduction of VLSI Design and Testing
EE 585 Fault Tolerant Computing
EE 586 Communications and Switching Networks
EE 587 Microcomputer Systems Design
EE 599 Topics in Electrical Engineering (subtitle required)

4. Credit Hours Required

	Current	Proposed
	130	130

Total Required for Graduation 128

b. Required by level

100 27 200 38 300 27 400-500 38

Premajor or Preprofessional (if applicable)

d. Field of Concentration (if applicable)

e. Division of Hours Between Major Subject and Related Field (if applicable)

Hours Needed for a Particular Option Or Specialization (if applicable)

g. Technical or Professional Support Electives (if applicable)

h. Minimum Hours of Free or Supportive Electives (Required)

5. Major or Professional Course Requirements

See Attached

Current	Proposed
1. 12 E/S Elective hours	19 E/S Elective hours
2. Math Elective (MA320, 321, 322	Any 300-level or above math or statistics course ma 320-required course

See Attached

6. Minor Requirements (if applicable)

Current	Proposed

Total Hours 130

Rationale for change(s): (If rationale involves accreditation requirements, please include specific references to those requirements.)

Need to update curriculum based on needs in the industry. The broadening of the electives will allow students to pursue math and science electives, consistent with industry.

The required MA 320 probability course is foundational to many performance analysis and system problems common to all areas of ECE. The current approach of trying to teach it