

CURRICULUM FOR ENGINEERING PHYSICS WITH CONCENTRATION IN COMPUTER ENGINEERING

(128 Credits)

PROFESSIONAL ORIENTATION (1 Cr. Required) *Selected from the following*

Introduction to AE & ME	AENG/MENG 1001	1
Biomedical Engineering Orientation	BME 1000	1
Introduction to ECE	ECE 1001	1
Introduction to Physics	PHYS 1110	1

BASIC SCIENCE & MATHEMATICS (46 Cr.) (ABET Minimum = 32 Cr.)

General Chemistry I/Lab	CHEM 1110/1115	4
Calculus I	MATH 1510	4
Calculus II	MATH 1520	4
Calculus III	MATH 2530	4
Differential Equations I	MATH 3550	3
Advanced Mathematics for Engineers	MATH 3270	3
Probability & Statistics for Engineers	MATH 4880	3
Numerical Analysis	MATH 3240	3
Engineering Physics I/Lab	PHYS 1610/1620	4
Engineering Physics II/Lab	PHYS 1630/1640	4
Modern Physics/Lab	PHYS 2610/2620	4
Classical Mechanics	PHYS 3110	3
Quantum Mechanics	PHYS 4610	3
		46

ENGINEERING PHYSICS & ENGINEERING TOPICS (53 Cr.) (ABET Minimum = 48 Cr.)

Intro. to CS: Scientific Programming	CSCI 1060	3
Engineering Circuits I	ECE 2101	3
Engineering Circuits II	ECE 2102	3
Electrical Science Lab	ECE 2103	1
Digital Design	ECE 2205	3
Digital Design Lab	ECE 2206	1
Semiconductor Devices	ECE 3130	3
Electromagnetic Fields	ECE 3140	3
Computer Systems Design/Lab	ECE 3215/3216	4
Microprocessors	ECE 3225	3
Microprocessors Lab	ECE 3226	1
ECE Design I,II (Senior Project)	ECE 4800, 4810	6
Optics/Lab	PHYS 3310/3320	4
Thermodynamics & Statistical Mechanics	PHYS 3410	3
2 Engineering Physics Electives	PHYS 4XXX	6
2 Engineering Electives	Selected in consultation with advisor	6
		53

GENERAL EDUCATION (22 Cr.)

Written Communication	ENGL1900 or 1920	3
Small Group Presentation	CMM 2200	1
Theological Foundations	THEO 1000	3
Ethics	PHIL 2050	3
Ethics & Engineering	PHIL 3400	3
Humanities Elective		3
Social/Behavioral Sciences Elective		3
Cultural Diversity Elective		3

OPEN ELECTIVES (6 Cr.)

Two Courses		<u>6</u>
		28

Freshman Year:

Semester 1:	CR	Semester 2:	CR
Professional Orientation	1	PHYS 1610/1620 Engineering Physics I/ Lab	4
CHEM 1110/1115 General Chemistry I/Lab	4	Open Elective	3
ENGL 1900 or 1920 Adv. Strategies of Rhetoric & Research or Adv. Writing for Professionals	3	MATH 1520 Calculus II	4
MATH 1510 Calculus I	4	CSCI 1060 Intro. to CS: Scientific Programming	3
Humanities Elective	3	THEO 1000 Theological Foundations	3
Total Credit Hours	15	Total Credit Hours	17

Sophomore Year:

Semester 1:	CR	Semester 2:	CR
PHYS 1630 Engineering Physics II	3	PHYS 2610 Modern Physics	3
PHYS 1640 Engineering Physics II Laboratory	1	PHYS 2620 Modern Physics Laboratory	1
MATH 2530 Calculus III	4	PHYS 3110 Classical Mechanics	3
CMM 2200 Small Group Presentation	1	MATH 3550 Differential Equations I	3
ECE 2101 Engineering Circuits I	3	ECE 3140 Electromagnetic Fields	3
Social Science Elective	3	ECE 2102 Engineering Circuits II	3
		ECE 2103 Electrical Science Laboratory	1
Total Credit Hours	15	Total Credit Hours	17

Junior Year:

Semester 1:	CR	Semester 2:	CR
PHIL 2050 Ethics	3	MATH 3240 Numerical Analysis	3
ECE 2205/2206 Digital Design/Lab	4	PHYS 3410 Thermodynamics & Statistical Mech.	3
PHYS 4610 Quantum Mechanics	3	ECE 3215/3216 Computer Systems Design/Lab	4
MATH 3270 Advanced Mathematics for Engineers	3	MATH 4880 Probability & Statistics for Engineers	3
ECE 3130 Semiconductor Devices	3	Open Elective	3
Total Credit Hours	16	Total Credit Hours	16

Senior Year:

Semester 1:	CR	Semester 2:	CR
ECE Elective	3	ECE 4810 ECE Design II (Senior Project)	3
Engineering Physics Elective	3	PHYS 3310 Optics	3
ECE 4800 ECE Design I (Senior Project)	3	PHYS 3320 Optics Laboratory	1
ECE 3225/3226 Microprocessors/Lab	3	Engineering Physics Elective	3
PHIL 3400 Ethics & Engineering	3	ECE Elective	3
		Cultural Diversity Elective	3
Total Credit Hours	16	Total Credit Hours	16

Total Credit Hours: 128