CURRICULUM FOR ENGINEERING PHYSICS WITH CONCENTRATION IN MECHANICAL 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 (43 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
Quantum Mechanics	PHYS 4610	3
		43

ENGINEERING PHYSICS & ENGINEERING TOPICS (59 CR.) (ABET Minimum = 48 Cr.)

Computer Aided Engineering	AENG 3100	3
Intro. to CS: Scientific Programming	CSCI 1060	3
Statics	ESCI 2100	3
Dynamics	ESCI 2150	3
Thermodynamics	ESCI 2300	3
Mechanics of Solids/Lab	ESCI 3100/3101	4
Fluid Dynamics/Lab	ESCI 3200/3201	4
Linear Vibrations	ESCI 3300	3
Computer-Aided Engineering Design	MENG 1002	1
Foundation of Engineering Design	MENG 2000	3
Machine Design	MENG 3010	3
Design I,II	MENG 4004, 4014	6
Upper Division Engineering Course	MENG/ESCI 3XXX, 4XXX	3
Optics/Lab	PHYS 3310/3320	4
Analog & Digital Electronics/Lab	PHYS 3510	4
Electricity & Magnetism I	PHYS 4210	3
2 Engineering Physics Electives	PHYS 4XXX	6
		59

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 ELECTIVE (3 Cr.)

One Course	3
	25

Freshman Year:

Semester 1:	**CR**	***Semester 2:***	**CR**
Professional Orientation	1	PHYS 1610 Engineering Physics I	3
CHEM 1110/1115 General Chemistry I/Lab	4	PHYS 1620 Engineering Physics I Laboratory	1
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
		MENG 1002 Computer-Aided Eng. Design	1
Total Credit Hours	**15**	**Total Credit Hours**	**15**

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	MATH 3240 Numerical Analysis	3
CMM 2200 Small Group Presentation	1	MATH 3550 Differential Equations I	3
ESCI 2100 Statics	3	MENG 2000 Foundations of Engineering Design	3
Social Science Elective	3	ESCI 2150 Dynamics	3
Open Elective	3		
Total Credit Hours	**18**	**Total Credit Hours**	**16**

Junior Year:

Semester 1:	**CR**	***Semester 2:***	**CR**
PHIL 2050 Ethics	3	PHYS 4210 Electricity & Magnetism I	3
ESCI 2300 Thermodynamics	3	AENG 3100 Computer Aided Engineering	3
PHYS 3510 Analog & Digital Electronics/Lab	4	MENG 3010 Machine Design	3
MATH 3270 Adv. Mathematics for Engineers	3	MATH 4880 Probability & Stat. for Engineers	3
ESCI 3100 Mechanics of Solids	3	ESCI 3300 Linear Vibrations	3
ESCI 3101 Mechanics of Solids Lab	1		
Total Credit Hours	**17**	**Total Credit Hours**	**15**

Senior Year:

Semester 1:	**CR**	***Semester 2:***	**CR**
ESCI 3200 Fluid Dynamics	3	MENG 4014 Design II	3
ESCI 3201 Fluid Dynamics Lab	1	Cultural Diversity Elective	3
Engineering Physics Elective	3	PHYS 3310/3320 Optics/Lab	4
MENG 4004 Design I	3	ESCI or MENG Upper Division Course	3
PHYS 4610 Quantum Mechanics	3	Engineering Physics Elective	3
PHIL 3400 Ethics & Engineering	3		
Total Credit Hours	**16**	**Total Credit Hours**	**16**

Total Credit Hours: 128