COLLEGE OF ENGINEERING
BACHELOR OF SCIENCE IN ENGINEERING SCIENCE AND MECHANICS
For students graduating in Calendar Year 2008

NAME _____

Freshman	Grades & Credits		
CHEM 1074-1084: General Chemistry	3_____	1_____	
ENGE 1024 Engineering Exploration	2_____		
ENGE 1114 Exploration of Engineering Design **or** ENGE 1104 Exploration of Digital Future		2_____	
ENGL 1105-1106: Freshman English	3_____	3_____	
MATH 1205-1206: Calculus I, Calculus II	3_____	3_____	
MATH 1114: Elementary Linear Algebra, Math 1224: Vector Geometry	2_____	2_____	
PHYS 2305: Foundations of Physics		4_____	
Elective[1]	3_____	3_____	
			_____
			34 hrs.

Sophomore			
ESM 2014 Professional Seminar for ESM Students	1_____		
ESM 2104: Statics	3_____		
ESM 2304: Dynamics		3_____	
ESM 2204: Mechanics of Deformable Bodies		3_____	
MATH 2224: Multivariable Calculus, Math 2214: Differential Equations	3_____	3_____	
PHYS 2306: Foundations of Physics	4_____		
ISE 2014: Engineering Economy	2_____		
ESM 2074: Computational Methods		3_____	
MSE 2034: Elements of Materials Engineering		3_____	
Elective[1]	1_____		
Elective[1]	3_____	3_____	
			_____
			35 hrs.

Junior			
Math 4574: Vector and Complex Analysis, Math 4564: Operational Methods	3_____	3_____	
ECE 3054: Electrical Theory	3_____		
ESM 3124: Intermediate Dynamics		3_____	
ME 3134: Thermodynamics	3_____		
ESM 4004: Inst and Exper Mechanics		3_____	
ESM 3015, 3016: Fluid Mechanics I, Fluid Mechanics II	2_____	3_____	
ESM 3034: Fluid Mechanics Lab[2]		1_____	
ESM 3054: Mechanical Behavior of Materials	2_____		
ESM 3064: Mechanical Behavior of Materials Lab[2]	1_____		
ESM 3154: Solid Mechanics		3_____	
Free Elective	3_____		
			_____
			33 hrs.

Senior			
ESM 4015: Senior Design, ESM 4016: Senior Project[2]	3_____	3_____	
ESM 4074: Vibration & Control	3_____		
ESM 4734: Finite Element Method		3_____	
ESM 4014: Applied Fluid Mechanics	3_____		
ESM 4614: Reliability Methods	2_____		
Technical Elective[3]	6_____	6_____	
Free Elective		3_____	
Free Elective		2_____	
			_____
			34 hrs.

Foreign language requirement: Students who did not complete 2 units of a foreign language in high school must earn 6 credit hours of a college level foreign language, such credits to be in addition to those normally required for graduation.

Eligibility for continued enrollment: upon having completed 72 hours (including transfer, advanced placement, advanced standing, and credit by examination), "satisfactory progress" toward a B.S. degree will include the following minimum criteria: all courses in the freshman year; Math 2214, 2224; ESM 2014, 2104, 2204, 2304, 2074; Phys 2305, 2306.

1. These electives must include 6 credits each for Core Areas 2 and 3, 1 credit from Core Area 6, and 3 credits from Core Area 7 (the Area 7 course may double count with Area 2 or 3).
2. Fulfills writing intensive requirement.
3. At least 6 of the 12 technical elective hours must be taken in the ESM Department. See attached list for approved technical electives. Additional technical electives are possible with the approval of the student's advisor and the Associate Department Head. In taking the 12 hours of technical electives, the student must obey all prerequisite rules.

Statement on Hidden Prerequisites: There are no hidden prerequisites for any course on this check sheet.

see next page

An in-major (all ESM classes) and overall GPA of 2.0 is required for graduation.

A TOTAL OF 136 SEMESTER HOURS ARE REQUIRED FOR GRADUATION.

Technical Electives (12 hours required)

A minimum of 6 hours chosen from:

ESM 4024: Advanced Mechanical Behavior of Materials	3_____	
ESM 4044: Mechanics of Composite Materials	3_____	
ESM 4084: Engineering Design Optimization	3_____	
ESM 4105-4106: Engineering Analysis of Physiologic Systems	3_____	3_____
ESM 4114: Nonlinear Dynamics	3_____	
ESM 4154: Nondestructive Evaluation of Materials	3_____	
ESM 4184: Design and Optimization of Composite Structures	3_____	
ESM 4204: Musculoskeletal Biomechanics and Biologic Control	3_____	
ESM 4224: Biodynamics & Control	3_____	
ESM 4234: Mechanics Bio Matls and Struct	3_____	
ESM 4304: Hemodynamics	3_____	
ESM 4444: Stability of Structures	3_____	
ESM 4524: Introduction to Wave Motion	3_____	
ESM 4574: Biomaterials	3_____	
ESM 5405-5406: Clinical Internship in Biomedical Engineering (3 hours countable as technical electives, the other 3 hours countable as free electives)	3_____	

Other approved technical electives:

AOE 3024: Thin-Walled Structures	3_____	
AOE 3124: Aerospace Structures	3_____	
AOE 3224: Ocean Structures	3_____	
AOE 3134: Stability and Control	3_____	
AOE 4134: Astromechanics	3_____	
AOE 4144: Aircraft Automatic Flight Control	3_____	
AOE 4214: Ocean Wave Mechanics	3_____	
CEE 3404: Theory of Structures	3_____	
CEE 3414: Design of Wood Structures	3_____	
CEE 3424: Reinforced Concrete Structures I	3_____	
CEE 3434: Design of Steel Structures I	3_____	
ECE 3105-3106: Electromagnetic Fields	3_____	3_____
ECE 4405-4406: Control Systems	3_____	
ME 3304: Heat and Mass Transfer	3_____	
ME 4234: Aerospace Propulsion Systems	3_____	
ME 4224: Aircraft Engines and Gas Turbines	3_____	
ME 4504: Dynamic Systems Controls Engineering I	3_____	
ME 4514: Controls Engineering II	3_____	
ME 4524: Introduction to Robotics and Automation	3_____	
MSE 4304: Metals and Alloys	3_____	
MSE 4055: Materials Selection and Design I	3_____	
MSE 4164: Corrosion	3_____	
CHEM 2535-2536: Organic Chemistry	3_____	3_____
CHEM 2545-2546: Organic Chemistry Laboratory	1_____	1_____
CHEM 4654: Adhesive and Sealant Science	3_____	
MATH 4164: Advanced Discrete Mathematics	3_____	
MATH 4234: Elementary Complex Analysis	3_____	
PHYS 3405-3406: Intermediate Electricity and Magnetism	3_____	3_____
PHYS 4455-4456: Introduction to Quantum Mechanics	3_____	
PHYS 4504: Introduction to Nuclear and Particle Physics	3_____	
PHYS 4714: Introduction to Biophysics	3_____	
STAT 3615-3616: Biological Statistics	3_____	3_____
STAT 4604: Statistical Methods for Engineers	3_____	
STAT 4705-4706: Probability and Statistics for Engineers	3_____	3_____