College of Engineering
Bachelor of Science in Engineering Science and Mechanics
For Students Graduating in Calendar Year 2011

Name: _____ Advisor: _____

Freshman Year

Fall Semester			Spring Semester		
CHEM 1035 General Chemistry	3		ENGE 1114 Exploration of Engineering Design	2	
CHEM 1045 General Chemistry Lab.	1		ENGL 1106 Freshman English	3	
ENGE 1024 Engineering Exploration	2		MATH 1206 Calculus	3	
ENGL 1105 Freshman English	3		MATH 1224 Vector Geometry	2	
MATH 1205 Calculus	3		PHYS 2305 Foundations of Physics I	4	
MATH 1114 Linear Algebra	2		Area 2/3 & 7 Liberal Education*	3	
Area 2/3 Liberal Education	3				
TOTAL HOURS	17		TOTAL HOURS	17	

Sophomore Year

Fall Semester			Spring Semester		
ESM 2014 Prof. Development Seminar	1		ESM 2074 Computational Methods	3	
ESM 2104 Statics	3		ESM 2204 Mechanics of Deformable Bodies	3	
ISE 2014 Engineering Economy	2		ESM 2304 Dynamics	3	
MATH 2224 Multivariable Calculus	3		MATH 2214 Intro. Diff. Equations	3	
PHYS 2306 Foundations of Physics II	4		MSE 2034 Elements Materials Engr.	3	
Area 2/3 Liberal Education	3		Area 2/3 Liberal Education	3	
Area 6 Liberal Education	1				
TOTAL HOURS	17		TOTAL HOURS	18	

Junior Year

Fall Semester			Spring Semester		
ESM 3015 Fluid Mechanics I	3		ESM 3016 Fluid Mechanics II	3	
ESM 3054 Mechanical Behavior of Materials	2		ESM 3034 Fluid Mechanics Laboratory £	1	
ESM 3064 Mech. Behavior of Matls. Lab £	1		ESM 3124 Intermediate Dynamics	3	
ECE 3054 Electrical Theory	3		ESM 4004 Inst. & Exp. Mechanics	3	
MATH 4574 Vector & Complex Analysis	3		ESM 3154 Solid Mechanics or ESM 4234 Mech. Biol. Matls. & Struct.**	3	
ME 3134 Thermodynamics	3		MATH 4564 Operational Methods	3	
TOTAL HOURS	15		TOTAL HOURS	16	

Senior Year

Fall Semester			Spring Semester		
ESM 4015 Creative Design & Proj. I	3		ESM 4016 Creative Design & Proj. II £	3	
ESM 4074 Vibration and Control	3		ESM 4734 Intro Finite Elements	3	
ESM 4014 Applied Fluid Mechanics or ESM 4304 Hemodynamics**	3		Technical Elective %	3	
ESM 4614 Reliability Methods	2		Technical Elective %	3	
Technical Elective %	3				
Technical Elective %	3				
TOTAL HOURS	17		TOTAL HOURS	12	

* Only selected courses can satisfy both Area 2/3 & 7 requirements. Use extra care when selecting this course.

** This is an alternate course not typically offered during the indicated semester. Use extra care when planning.

£ Fulfills Visual Expression, Writing and Speaking.

Foreign Language Requirement: Students who did not complete 2 units of 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, including a minimum grade of C- or better in ENGE 1024 and ENGE 1114; MATH 2214, 2224; ESM 2014, 2104, 2204, 2304, 2074; PHYS 2305, 2306, and a 2.5 GPA.

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

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

% See attached list for approved technical electives. Additional technical electives are possible with the approval of the Associate Department Head.

A TOTAL OF 136 SEMESTER HOURS ARE REQUIRED FOR GRADUATION.

Approved Technical Electives:

ESM 4024: Advanced Mechanical Behavior of Materials
ESM 4044: Mechanics of Composite Materials
ESM 4084: Engineering Design Optimization
ESM 4105-4106: Engineering Analysis of Physiologic Systems
ESM 4114: Nonlinear Dynamics
ESM 4154: Nondestructive Evaluation of Materials
ESM 4184: Design and Optimization of Composite Structures
ESM 4204: Musculoskeletal Biomechanics and Biologic Control
ESM 4224: Biodynamics & Control
ESM 4444: Stability of Structures
ESM 4524: Introduction to Wave Motion
ESM 4574: Biomaterials
ESM 5405 or 5406: Clinical Internship in Biomedical Engineering
AOE 3024: Thin-Walled Structures
AOE 3124: Aerospace Structures
AOE 3224: Ocean Structures
AOE 3134: Stability and Control
AOE 4134: Astromechanics
AOE 4144: Aircraft Automatic Flight Control
AOE 4214: Ocean Wave Mechanics
CEE 3404: Theory of Structures
CEE 3414: Design of Wood Structures
CEE 3424: Reinforced Concrete Structures I
CEE 3434: Design of Steel Structures I
ECE 3105-3106: Electromagnetic Fields
ECE 4405-4406: Control Systems
ME 3304: Heat and Mass Transfer
ME 4234: Aerospace Propulsion Systems
ME 4224: Aircraft Engines and Gas Turbines
ME 4504: Dynamic Systems Controls Engineering I
ME 4514: Controls Engineering II
ME 4524: Introduction to Robotics and Automation
MSE 4304: Metals and Alloys
MSE 4055: Materials Selection and Design I
MSE 4164: Corrosion
CHEM 2535-2536: Organic Chemistry
CHEM 2545-2546: Organic Chemistry Laboratory
CHEM 4654: Adhesive and Sealant Science
MATH 3214: Calculus of Several Variables
MATH 4164: Advanced Discrete Mathematics
MATH 4234: Elementary Complex Analysis
MATH 4445-4446: Intro. Numerical Analysis
PHYS 3405-3406: Intermediate Electricity and Magnetism
PHYS 4455-4456: Introduction to Quantum Mechanics
PHYS 4504: Introduction to Nuclear and Particle Physics
PHYS 4714: Introduction to Biophysics
STAT 3615-3616: Biological Statistics
STAT 4604: Statistical Methods for Engineers
STAT 4705-4706: Probability and Statistics for Engineers