

**College of Engineering**  
**Bachelor of Science in Engineering Science and Mechanics**  
**For students graduating in Calendar Year 2009**

Name: \_\_\_\_\_

Advisor: \_\_\_\_\_

Freshman Year

Fall Semester	
CHEM 1035, 1045 (Chemistry, Lab)	4
ENGE 1024 (Intro. to Engr. I)	2
ENGL 1105 (Freshmen English)	3
MATH 1205 (Calculus)	3
MATH 1114 (Linear Algebra)	2
Area 2/3 Liberal Education	3
<b>TOTAL HOURS</b>	<b>17</b>

Spring Semester	
ENGE 1114 (Intro. to Engr II)	2
ENGL 1106 (Freshman English)	3
MATH 1206 (Calculus)	3
MATH 1224 (Vector Geometry)	2
PHYS 2305 (Physics I)	4
Area 2/3 & 7 Liberal Education*	3
<b>TOTAL HOURS</b>	<b>17</b>

Sophomore Year

Fall Semester	
ESM 2014 Prof. Development Seminar	1
ESM 2104 (Statics)	3
ISE 2014 (Engr. Econ.)	2
MATH 2224 (Multivar. Calculus)	3
PHYS 2306 (Physics II)	4
Area 2/3 Liberal Education	3
Area 6 Liberal Education	1
<b>TOTAL HOURS</b>	<b>17</b>

Spring Semester	
ESM 2074 (Comp. Methods)	3
ESM 2204 (Mech. of Deforms)	3
ESM 2304 (Dynamics)	3
MATH 2214 (Differential Eqns.)	3
MSE 2034 (Elements Materials Engr.)	3
Area 2/3 Liberal Education	3
<b>TOTAL HOURS</b>	<b>18</b>

Junior Year

Fall Semester	
ESM 3015 (Fluid Mech. I)	2
ESM 3054 (Behavior of Materials)	2
ESM 3064 (Behavior of Materials Lab) £	1
ECE 3054 (Elect. Theory)	3
MATH 4574 (Vector & Complex Anal.)	3
ME 3134 (Thermodynamics)	3
Free Elective	3
<b>TOTAL HOURS</b>	<b>17</b>

Spring Semester	
ESM 3016 (Fluid Mech. II)	3
ESM 3034 (Fluids Lab) £	1
ESM 3124 (Inter. Dynamics)	3
ESM 4004 (Inst. & Exp. Mechanics)	3
ESM 3154 (Solid Mechanics)	3
MATH 4564 (Operational Methods)	3
<b>TOTAL HOURS</b>	<b>16</b>

Senior Year

Fall Semester	
ESM 4015 (Creative Design & Proj. I)	3
ESM 4074 (Vibration and Control)	3
ESM 4614 (Reliability Methods)	2
ESM 4014 (Applied Fluid Mechanics)	3
Technical Elective %	3
Technical Elective %	3
<b>TOTAL HOURS</b>	<b>17</b>

Spring Semester	
ESM 4016 (Creative Design & Proj. II) £	3
ESM 4734 (Intro to FEA)	3
Technical Elective %	3
Technical Elective %	3
Free Elective	3
Free Elective	2
<b>TOTAL HOURS</b>	<b>17</b>

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

£ Fulfills writing intensive requirement.

*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; 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.*

**A TOTAL OF 136 SEMESTER HOURS ARE REQUIRED FOR GRADUATION.**

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

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 4234: Mechanics Bio Matls and Struct  
ESM 4304: Hemodynamics  
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 4164: Advanced Discrete Mathematics  
MATH 4234: Elementary Complex 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