

**College of Engineering**  
**Bachelor of Science in Engineering Science and Mechanics**  
**Biomechanics Option**  
**For Students Graduating in Calendar Year 2010**

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

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

**Freshman Year**

Fall Semester	
CHEM 1035 General Chemistry	3
CHEM 1045 General Chemistry Lab.	1
ENGE 1024 Engineering Exploration	2
ENGL 1105 Freshman 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 Exploration of Engineering Design	2
ENGL 1106 Freshman English	3
MATH 1206 Calculus	3
MATH 1224 Vector Geometry	2
PHYS 2305 Foundations of 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 Engineering Economy	2
MATH 2224 Multivariable Calculus	3
PHYS 2306 Foundations of 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 Computational Methods	3
ESM 2204 Mechanics of Deformable Bodies	3
ESM 2304 Dynamics	3
MATH 2214 Intro. Diff. Equations	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 Mechanics I	3
ESM 3054 Mechanical Behavior of Materials	2
ESM 3064 Mech. Behavior of Matls. Lab £	1
ECE 3054 Electrical Theory	3
MATH 4574 Vector & Complex Analysis	3
ME 3134 Thermodynamics	3
Free Elective	3
<b>TOTAL HOURS</b>	<b>18</b>

Spring Semester	
ESM 3016 Fluid Mechanics II	3
ESM 3034 Fluid Mechanics Laboratory £	1
ESM 3124 Intermediate Dynamics	3
ESM 4004 Inst. & Exp. Mechanics	3
BMVS 4064 Intro. to Medical Physiology	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 4234 Mech. Bio. Mat. and Struct. or	
ESM 3154 Solid Mechanics**	3
STAT 3704 Stat. for Engr. App.	2
Biomechanics Option Course †	3
Biomechanics Option Course †	3
<b>TOTAL HOURS</b>	<b>17</b>

Spring Semester	
ESM 4016 Creative Design & Proj. II %£	3
ESM 4734 Intro Finite Elements	3
ESM 4304 Hemodynamics or	
ESM 4014 Applied Fluid Mechanics**	3
Biomechanics Option Course †	3
Biomechanics Option Course †	3
Free Elective	1
<b>TOTAL HOURS</b>	<b>16</b>

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

% Students must also complete a senior design project within the area of biomechanics.

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

£ Fulfills Visual Expression, Writing and Speaking Requirement

† See attached list for approved biomechanics option courses.

*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.*

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

Freshman 2006-07

**Approved Biomechanics Option Courses (Choose 4):**

ESM 4105: Engineering Analysis of Physiologic Systems  
ESM 4204: Musculoskeletal Biomechanics and Biologic Control  
ESM 4224: Biodynamics & Control  
ESM 4574: Biomaterials  
ESM 5354: Mathematical Modeling of Biological Dynamics  
BMES 5174: Biomechanics Of Crash Injury Prevention  
BMES 5304: Biological Transport Phenomena  
BMES 5544: Biomedical Signal Processing  
CHE 4544: Protein Separation Engineering  
ME 4754: Impact Biomechanics