

**ATTACHMENT C: MECHANICAL ENGINEERING BACHELOR OF SCIENCE DEGREE REQUIREMENTS  
2007 – 2009 CATALOGUE: 136 CREDITS  
(Five-Year Plan for Students Who Wish to Pursue a Minor)**

Fall Semester				
Number	Title	Cr	Se	Gr
ENSC 100	Engineering Seminar <sup>1</sup>	0		
MATH 157	Calculus & Analytical Geometry I	4		
CHEM 101	General Chemistry (or CHEM 105)	3		
CHEM 101L	General Chemistry Lab (or CHEM 105L)	1		
CPSC 121	Computer Science I	3		
ENGL ____	English Literature Elec. (or ENGL 103H)	3		
RELI 1____	Scriptural Studies Elective	3		
<b>Totals Credits:</b>		17		

FRESHMAN YEAR – OPTION A  
(SEE REVERSE SIDE FOR  
ALTERNATIVE FRESHMAN YEAR  
PLAN, OPTION B)

Spring Semester				
Number	Title	Cr	Se	Gr
ENSC 205	Statics	3		
MATH 258	Calculus & Analytical Geometry II	4		
PHYS 103	Scientific Physics I	3		
PHYS 103L	Scientific Physics I Laboratory	1		
PHYS 103R	Scientific Physics I Recitation	0		
ENGL 101	English Composition	3		
SPCO 101	Introduction to Speech Communication	2		
PHIL 101	Introduction to Critical Thinking	2		
<b>Totals Credits:</b>		18		

Fall Semester				
Number	Title	Cr	Se	Gr
MENG 221	Materials Engineering	3		
MENG 291	Intro. to Mechanical Eng. Design	2		
MENG 291L	Intro. to Mechanical Eng. Design Lab	1		
MATH 259	Calculus & Analytical Geometry III	4		
ENSC 300	Engineering Economics	2		
<b>Totals Credits:</b>		12		

SOPHOMORE YEAR

Spring Semester				
Number	Title	Cr	Se	Gr
ENSC 244	Computer Methods for Engineers	3		
MATH 260	Ordinary Differential Equations	3		
ENSC 306	Dynamics	3		
PHYS 204	Scientific Physics II	3		
PHYS 204L	Scientific Physics II Laboratory	1		
PHYS 204R	Scientific Physics II Recitation	0		
<b>Totals Credits:</b>		13		

Fall Semester				
Number	Title	Cr	Se	Gr
MENG 321	Thermodynamics I	3		
ENSC 301	Mechanics of Materials I	3		
MATH 321	Statistics for Experimentalists	3		
ENSC 352	Fluid Mechanics	3		
<b>Totals Credits:</b>		12		

JUNIOR YEAR

Spring Semester				
Number	Title	Cr	Se	Gr
MENG 301	Manufacturing Processes	2		
MENG 301L	Manufacturing Processes Laboratory	1		
MENG 322	Thermodynamics II	3		
MENG 330	Machine Design	3		
MENG 391	Mechanical Eng. Design Fundamentals	1		
MENG 391L	Mechanical Eng. Design Fund. Laboratory	1		
MENG 341	Heat Transfer	3		
<b>Totals Credits:</b>		14		

Fall Semester				
Number	Title	Cr	Se	Gr
ENSC 311	Electrical Engineering Science	3		
ENSC 311L	Electrical Engineering Science Lab	1		
ENSC 371	Advanced Engineering Mathematics	3		
PHIL 201	Philosophy of Human Nature	3		
RELI 2____	Christian Doctrine Elective	3		
<b>Totals Credits:</b>		13		

SENIOR YEAR

Spring Semester				
Number	Title	Cr	Se	Gr
**** ____	Technical Elective <sup>2</sup>	3		
**** ____	Technical Elective <sup>2</sup>	3		
RELI 3____	Applied Theology Elective	3		
PHIL 301	Ethics	3		
<b>Totals Credits:</b>		12		

Fall Semester				
Number	Title	Cr	Se	Gr
MENG 411	Measurements and Instrumentation I	3		
MENG 411L	Measurements and Instrumentation I Lab	1		
MENG 434	Vibration Engineering	3		
MENG 461	System Dynamics and Control	3		
MENG 491	Mechanical Engineering Design I	2		
<b>Totals Credits:</b>		12		

FIFTH YEAR

Spring Semester				
Number	Title	Cr	Se	Gr
MENG 412	Measurements and Instrumentation II	3		
MENG 412L	Measurements and Instrumentation II Lab	1		
MENG 492	Mechanical Engineering Design II	3		
**** ____	Technical Elective <sup>2</sup>	3		
PHIL 4____	Philosophy Elective	3		
ENSC 400	Fundamentals of Engineering Exam	0		
<b>Totals Credits:</b>		13		

## ALTERNATIVE FRESHMAN YEAR PLAN, OPTION B

Fall Semester				
Number	Title	Cr	Se	Gr
ENSC 100	Engineering Seminar <sup>1</sup>	0		
MATH 157	Calculus & Analytical Geometry I	4		
CHEM 101	General Chemistry (or CHEM 105)	3		
CHEM 101L	General Chemistry Lab (or CHEM 105L)	1		
CPSC 121	Computer Science I	3		
PHIL 101	Introduction to Critical Thinking	2		
ENGL 101	English Composition	3		
SPCO 101	Introduction to Speech Communication	2		
<b>Totals Credits:</b>		18		

FRESHMAN YEAR – OPTION B

Spring Semester				
Number	Title	Cr	Se	Gr
ENSC 205	Statics	3		
MATH 258	Calculus & Analytical Geometry II	4		
PHYS 103	Scientific Physics I	3		
PHYS 103L	Scientific Physics I Laboratory	1		
PHYS 103R	Scientific Physics I Recitation	0		
ENGL ____	English Literature Elec. (or ENGL 103H)	3		
RELI 1____	Scriptural Studies Elective	3		
<b>Totals Credits:</b>		17		

APPROVED TECHNICAL ELECTIVES <sup>3</sup>	
Number	Title
MENG 435	Applications in Vibrations
MENG 442	Advanced Heat Transfer
MENG 445	Heating, Ventilating, and Air Conditioning
MENG 446	Mechanical Design and Cooling of Electronic Systems
MENG 450	Topics in Machine Design
MENG 462	Gas Dynamics
MENG 463	Simulation and Optimization
MENG 465	Introduction to Finite Elements
MENG 467	Designing with Polymers and Composites
MENG 480	Advanced Fluid Mechanics
MENG 484	Manufacturing Systems
CENG 301	Structural Analysis I
CENG 390	Structural Analysis II
EENG 412	Digital Control Systems
ENSC 413	Automation
ENSC 405 <sup>4</sup> - or - OPER 445 <sup>4</sup>	Engineering Project Management - or - Process Management and Improvement

<sup>1</sup> Not required of transfer students nor of students in the Honors or Hogan programs.

<sup>2</sup> See the table below for approved technical electives.

<sup>3</sup> Courses used to meet the technical elective requirements are normally selected from those listed in this table, although students may select other courses with the approval of the advisor and the Department Chair. All pre- and co-requisite requirements must be satisfied when registering for these courses (see the Undergraduate Catalogue for course requirements). In some cases, the pre- and/or co-requisite requirements may constitute extra courses above those required for the Bachelor of Science Degree in Mechanical Engineering.

<sup>4</sup> Either ENSC 405 or OPER 445 may be counted for credit towards technical elective requirements, but not both.