



MERRIMACK COLLEGE

# SCHOOL OF SCIENCE & ENGINEERING



## MECHANICAL ENGINEERING

Mechanical engineering students at Merrimack learn to be creative, articulate and highly competent professionals. Our students follow a challenging curriculum, participate in professional activities and interact with future employers.

### ENGAGING COURSEWORK

A dynamic curriculum builds strong practical knowledge from introductory classes to specialized coursework.

Our curriculum includes extensive general education requirements along with a rigorous mechanical engineering curriculum and multidisciplinary support in chemistry, physics, computer science, and mathematics.

A selection of program coursework includes:

- MEN 5012 Instrumentation/Robotics
- MEN 5040 Advanced Fluid Mechanics
- MEN 4810 Finite Element Analysis
- MEN 5050 Processing and Manufacturing
- MEN 5060 Advanced Materials
- MEN 4810 Aerospace Engineering

### REWARDING CAREER PATHS

Mechanical engineers work in fields ranging from robotics to superconductivity, from centrifuges to artificial joints and limbs, from rocket propulsion systems to air conditioners. Almost everything sold on the market today has involved mechanical engineering, from conception and design to production and marketing.

With a mechanical engineering degree you may work in industries such as aerospace, automotive, bioengineering, communications, petroleum or product manufacturing. Well-known companies who employ mechanical engineers include: General Electric, Boston Scientific, General Motors, Ford, Boeing, Pratt & Whitney, IBM, Lockheed Martin, Ametek, Amazon Robotics, and iRobot.

According to the Bureau of Labor Statistics, mechanical engineers account for one in six engineers in the U.S. and are expected to have significant employment growth over the decade.

### PROGRAM HIGHLIGHTS

#### 3-D Printer

The Engineering department is home to two 3-D Printers which are used for creating models and checking designs, in a process called rapid prototyping. Recent student projects include making a gyroscopic complex gear system and creating a prosthetic hand for a 12-year-old boy modeled after the child's favorite superhero: Batman.



### QUESTIONS?

Contact the **Mechanical Engineering Department** at:

- [consolim@merrimack.edu](mailto:consolim@merrimack.edu)
- (978) 837-5299



**MERRIMACK COLLEGE**  
**MECHANICAL ENGINEERING CURRICULUM**

Name  ID #  Class year:  ADVISOR:

FALL			SPRING			
<b>FRESHMAN YEAR</b>						
GEN 1001	Intro. to Engineering	4	<input type="checkbox"/>	MTH1505/2527** Applied Statistics	4	<input type="checkbox"/>
MTH 1217	Calculus I	4	<input type="checkbox"/>	MTH 1218 Calculus II	4	<input type="checkbox"/>
PHL 1000	Intro. to Philosophy	4	<input type="checkbox"/>	PHY 2211 Physics I	4	<input type="checkbox"/>
FYW 1050	College Writing	4	<input type="checkbox"/>	Arts & Lit (AL) Elective	4	<input type="checkbox"/>
FYE 1000	First Year Experience	0		or For Lang (FL)*		
			16	**MTH2527 may be substituted for MTH1505	16	
<b>SOPHOMORE YEAR</b>						
GEN 2010	Mechanics I	4	<input type="checkbox"/>	GEN 2012 Mechanics II	4	<input type="checkbox"/>
PHY 2212	Physics II	4	<input type="checkbox"/>	MTH 2220 Differential Equations	4	<input type="checkbox"/>
MTH 2219	Calculus III	4	<input type="checkbox"/>	GEN 3040 Fluid Mechanics	4	<input type="checkbox"/>
CSC 1611 or MEN 2050	Prob. Solving w/Python Eng. Computation/CAD	4	<input type="checkbox"/>	CHM 1110 General Chemistry	4	<input type="checkbox"/>
			16			16
<b>JUNIOR YEAR</b>						
MEN 3020	Materials Science	4	<input type="checkbox"/>	MEN 3010 Machine Design	4	<input type="checkbox"/>
MEN 3014	Dynamics / Vibrations	4	<input type="checkbox"/>	MEN 3034 Heat and Mass Transfer	4	<input type="checkbox"/>
MEN 3030	Thermodynamics I	2	<input type="checkbox"/>	Hist Studies (H)* Elective	4	<input type="checkbox"/>
MEN 3032	Thermodynamics II	2	<input type="checkbox"/>	Ethics Elective	4	<input type="checkbox"/>
RTS 1100 (or any 1000 level)	Christianity & Context	4	<input type="checkbox"/>			
			16	*or For Lang (FL)	16	
<b>SENIOR YEAR</b>						
MEN 5010	Adv. Mechanics/FEM	4	<input type="checkbox"/>	MEN 5030 Energy Systems	4	<input type="checkbox"/>
MEN	Depth elective	4	<input type="checkbox"/>	MEN	4	<input type="checkbox"/>
Technical	Elective ( <i>course here</i> )	4	<input type="checkbox"/>	MEN 4900 Senior Seminar	1	<input type="checkbox"/>
MEN 4910	Design Project I	2	<input type="checkbox"/>	MEN 4920 Design Project II	2	<input type="checkbox"/>
Soc. Science (SS)	Elective	4	<input type="checkbox"/>	Soc. Science (SS) Elective	4	<input type="checkbox"/>
			18			15
Overall GPA	<input style="width: 100px;" type="text"/>		<u>TOOK FE EXAM</u>		<input style="width: 100px;" type="text"/>	
Total Credits	<input style="width: 100px;" type="text"/>		DIVERSITY CRS.		<input style="width: 100px;" type="text"/> <i>Enter course used here</i>	
<b>NOTES</b>			<b>List of MEN Depth Electives</b>			
<p>*Note: Two courses are needed from three categories- Arts &amp; Literature (AL), Foreign Language (FL), and Historical Studies (H). Diversity credits can also be found in Arts &amp; Lit, Ethics or History courses <b>FE EXAM: In order to graduate, a student must provide written confirmation that he/she has taken the FE exam.</b>  For Co-op or Study Abroad see Dr. Capaldi</p>			<p>Students must take two of the following Depth Electives:</p> <p><b>Offered in Fall:</b> MEN 5012 Instrumentation/Robotics CEN 5012 Steel Analysis and Design MEN 5020 Mechanical Behavior of Polymers MEN 5040 Advanced Fluid Mechanics</p> <p><b>Offered in Spring:</b> MEN 5032 Solar &amp; Direct Energy Conversion MEN 5034 Windpower Systems MEN 5050 Processing and Manufacturing MEN 5060 Advanced Materials</p> <p>(or other classes approved by your advisor)</p>			