

MICHIGAN STATE UNIVERSITY—Department of Mechanical Engineering Requirements for the B.S. Degree (An ABET Accredited Program)

<http://www.egr.msu.edu/me/>

The following list of requirements applies to new mechanical engineering program freshmen and transfer students, **beginning Fall Semester 2008 and thereafter**. Program requirements are changed periodically, and consequently, each student is strongly encouraged to consult with an advisor for academic planning assistance.

Freshmen and sophomores: Call 355-6616, ext. 1 or go to 1410 Engineering Building.

Juniors and seniors Call 355-3338 or go to 2560 Engineering Building.

The application for upper school is located at: <http://www.egr.msu.edu/egr/programs/bachelors/admission.php> [Scroll down to the bottom.] It is available between the second week of the semester and the final day of classes. Applications are reviewed at the end of each semester after final grades have been posted.

Mechanical Engineering students may fulfill an alternative track to the Integrative Studies requirement in Biological and Physical Science (ISB & ISP) by completing one of the following courses: BS 161; ENT 205; MMG 201; PLB 105; **PSL 250**; ZOL 141. (Course in bold has 4 credits.)

DEGREE REQUIREMENTS	CREDITS	MAJOR REQUIREMENTS (Cont'd)	CREDITS
I. UNIVERSITY REQUIREMENTS (23)		Plus a minimum of 12 credits from the following list of Senior Electives , including at least one design intensive course, designated by an asterisk (i):	
Writing (WRA 110-150)	4		
Integrative Arts & Humanities (IAH)	8		
Integrative Social Science (ISS)	8		
Integrative Biol. & Phys. Sci. (ISB/ISP)—See box above	3	ME 416i Computer Assisted Design of Thermal Systems	3
II. COLLEGE REQUIREMENTS (30)		ME 417i Design of Alternative Energy Systems	3
EGR 100 Intro to Engineering Design	2	ME 422 Introduction to Combustion	3
EGR 102 Intro to Engineering Modeling	2	ME 423 Intermed. Mech. of Deformable Solids	3
MTH 132 Calculus I	3	ME 425 Experimental Mechanics	3
MTH 133 Calculus II	4	ME 426 Introduction to Composite Materials ¹	3
MTH 234 Multivariable Calculus	4	ME 440 Aerospace Engineering Fundamentals	3
MTH 235 Multivariable Calculus II & Differential Equations	3	ME 442i Turbomachinery	3
CEM 141 General Chemistry I	4	ME 444 Automotive Engines	3
PHY 183 Physics for Scientists & Engineers I	4	ME 445i Automotive Powertrain Design	3
PHY 184 Physics for Scientists & Engineers II	4	ME 456i Mechatronic System Design	3
III. MAJOR REQUIREMENTS & ELECTIVES (75)		ME 464 Intermediate Dynamics	3
CE 221 Statics	3	ME 465i Computer Aided Optimal Design	3
CEM 161 Chemistry Laboratory I	1	ME 475i Computer Aided Design of Structures	3
ECE 345 Electronic Instrumentation & Systems	3	ME 477 Manufacturing Processes	3
ME 201 Thermodynamics	3	ME 478 Product Development	3
ME 222 Mechanics of Deformable Solids	4	ME 490 Independent Study	1-3
ME 280 Engineering Graphic Communications	2	ME 491 Selected Topics	1-4
ME 332 Fluid Mechanics	4	ME 494 Biofluid Mechanics & Heat Transfer	3
ME 361 Dynamics	3	ME 495 Tissue Mechanics	3
ME 371 Mechanical Design I	3	ME 497 Biomechanical Design	3
ME 391 Mechanical Engineering Analysis	3	<i>•The above list of Senior Electives may be augmented with other courses that have been approved by the department. They can be found in the ME Bulletin (undergraduate newsletter.)</i>	
ME 410 Heat Transfer	3	<i>•Concentrations are available in manufacturing, mechanics, biomechanical, and global engineering. Contact the ME Advising Office for information.</i>	
ME 412 Heat Transfer Laboratory	2	Other Electives	9
ME 451 Control Systems	4	TOTAL	128
ME 461 Mechanical Vibrations	4		
ME 471 Mechanical Design II	3		
ME 481 Mechanical Engineering Design Projects	3		
MSE 250 Materials Science & Engineering 3	3		
STT 351 Probability & Statistics for Engineering	3		

¹ME 426 is administered by the CHEMS dept. Enroll in MSE 426.

Sample Academic Program

PLEASE NOTE: In recent years many students entering the University as first year freshmen have taken more than four years to complete the requirements for the bachelor's degree. This is a trend in all universities and has many causes.

Freshman Year						Sophomore Year					
Fall			Spring			Fall			Spring		
MTH	132	3	MTH	133	4	MTH	234	4	MTH	235	3
CEM	141	4	CEM	161	1	PHY	184	4	ME	201	3
EGR	100	2	PHY	183	4	CE	221	3	ME	222	4
ISB/ISP Alt. Track ¹	3		EGR	102	2	ME	280	2	MSE	250	3
ISS ²	2 --	4	WRA	1 --	4	Other Elective		3	IAH ³	20-	4
Junior Year						Senior Year					
Fall			Spring			Fall			Spring		
ME	361	3	ECE	345	3	ME	410	3	ME	412	2
ME	391	3	ME	332	4	ME	461	4	ME	451	4
STT	351	3	ME	371	3	ME	471	3	ME	481	3
ISS ²	3 --	4	IAH ³	2 --	4	Senior Elective		3	Senior Elective		3
Other Elective		3	Other Elective		3	Senior Elective		3	Senior Elective		3

¹The list of Alternative Track choices can be found on the reverse in the shaded box.

²ISS means "Integrative Studies in Social, Behavioral and Economic Sciences."

³IAH means "Integrative Studies in Arts & Humanities."

FALL SEMESTER ME COURSES—201, 222, 280, 332, 361, 371, 391, 410, 412, 416, 422, 423, 425, 440, 444, 451, 456, 461, 465, 471, 477, 481, 490, 491, 494.

SPRING SEMESTER ME COURSES—201, 222, 280, 332, 361, 371, 391, 410, 412, 417, 426, 442, 445, 451, 461, 464, 471, 475, 477, 478, 481, 490, 491, 495, 497.

SUMMER SEMESTER ME COURSES—First Session: 361, 391, 410. Second Session: 201, 222, 471. Full Session: 332, 412, 451 and/or 461, 490.

Contact the ME Advising Office (2560 EB/Tele: 517-355-3338) for up-to-date schedule information.

Program Educational Objectives for the Undergraduate Program in Mechanical Engineering Department of Mechanical Engineering Michigan State University (Approved by the Department Faculty February 17, 2005)

- Objective 1:** Our graduates will be competent engineers practicing in a diverse range of activities.*
- Objective 2:** Our graduates will use their mechanical engineering education as an impetus for personal & professional growth.*
- Objective 3:** Our graduates will have achieved a noteworthy level of workplace responsibility through understanding their environment and capabilities, including the importance of knowledge management.*
- Objective 4:** Our graduates will be independent thinkers who take ownership in identifying problems and determining effective solution strategies in a timely manner.*