

# Accelerated B.S. Mechanical Engineering

## Accelerated BS to MS Program

Students accepted into an accelerated undergraduate program may take departmentally approved graduate coursework as part of their undergraduate curriculum. These credits will count towards both their bachelor's and master's degrees and can fulfill major requirements, upper-division requirements, and/or free electives. For details on accelerated programs at Idaho State University, please see (Degree Requirements (<http://coursecat.isu.edu/undergraduate/degreerequirements/>)).

Once accepted into an accelerated degree program, it is strongly recommended for students to stay in close communication with their advisor regarding pursuit of acceptance into the Graduate School and the master's degree program at Idaho State University. Acceptance into an accelerated program during the bachelor's degree program is the first step in the admissions process. A separate application to the Graduate School is necessary for all accelerated programs. For more information regarding application and admission to the Graduate School at Idaho State University, please see the Graduate Admissions section of the graduate catalog (<http://coursecat.isu.edu/graduate/graduateadmissions/>).

## Mechanical Engineering Accelerated Criteria

This accelerated program gives outstanding bachelor's degree students in Mechanical Engineering a "fast-track" option to pursue graduate-level coursework towards the Master in Science degree (ME or MCE) during the last two semesters of undergraduate coursework and count up to 12 credits of that coursework towards completion of the bachelor's degree. For details on application and admission into the Accelerated program in Mechanical Engineering, please see (Mechanical Engineering (<http://coursecat.isu.edu/undergraduate/scienceengineering/mechanicalengineering/>)).

Including the University General Education Requirements listed elsewhere (8 of the 9 General Education Objectives, a minimum of 36 credits--see the General Education Requirements (<http://coursecat.isu.edu/undergraduate/academicinformation/generaleducation/>) in the Academic Information section of this catalog), the program of study for the Bachelor of Science in Mechanical Engineering degree totals a minimum of 120 credits as follows:

## General Education

The listing below includes program requirements that also fulfill General Education requirements.

Code	Title	Credits
Objective 1		6
Objective 2		3
Objective 3- MATH 1170		4
Objective 4		6
Objective 5- CHEM 1111 & CHEM 1111L, PHYS 2211		9
Objective 6		6
<b>Students must fulfill Objective 7 or Objective 8</b>		<b>3</b>
Objective 7		
Objective 8		
Objective 9		3
<b>Total Credits</b>		<b>40</b>

## Additional Mathematics and Science Course Requirements:

Code	Title	Credits
MATH 1170	Calculus I (Satisfies General Education Objective 3)	4
MATH 1175	Calculus II	4
MATH 2240	Linear Algebra	3
MATH 2275	Calculus III	4
MATH 3360	Differential Equations	3
CHEM 1111	General Chemistry I (Partially satisfies General Education Objective 5)	4
CHEM 1111L	General Chemistry I Lab (Partially satisfies General Education Objective 5)	1
PHYS 2211	Engineering Physics I (Partially satisfies General Education Objective 5)	4
The three previous courses together satisfy Objective 5.		
PHYS 2212	Engineering Physics II	4
<b>Total Credits</b>		<b>31</b>

## Mechanical Engineering Course Requirements:

Code	Title	Credits
CE/ME 2210	Engineering Statics <sup>1</sup>	3
CE/ME 3350	Mechanics of Materials <sup>1</sup>	3
CE 3360 or CE 3361	Engineering Economics Engineering Economics and Management	2-3
ECE 2205	Principles of Electrical Circuits	3
ME 1105	Solid Modeling	2
ME 1165	Structured Programming	2
CE/ME 2220	Engineering Dynamics <sup>1</sup>	3
ME 3307	Thermodynamics <sup>1</sup>	3
ME 3320	Kinematics and Dynamics of Machinery <sup>1</sup>	3
ME 3322	Mechanical Engineering Materials	3
ME 3323	Machine Design	3
ME 3325	Advanced Machine Design	3
CE/ME 3341	Fluid Mechanics <sup>1</sup>	3
ME 4406	Measurement Systems Laboratory	1
ME 4440/5540	Vibration Analysis	3
ME 4443	Thermal Fluids Laboratory	1
ME 4463	Mechanical Systems Design	3
ME 4465	Thermal Fluid System Design	3
ME 4473/5573	Mechanical Control Systems	3
ME 4476	Heat Transfer	3
ME 4496A	Project Design I	3
ME 4496B	Project Design II	3
ME Electives <sup>2</sup>		6
<b>Total Credits</b>		<b>65-66</b>

<sup>1</sup> Course may involve evening examinations and/or presentations.

<sup>2</sup> Students are to consult with their advisors regarding other 5000 level courses available for the accelerated BS to MS program (4000/5000)

Free Electives	0
Total Credits	123-124

**For students interested in focusing their ME degree in the Systems area, suggested electives are:**

Code	Title	Credits
MATH 3350	Statistical Methods	3
MATH 3352	Introduction to Probability	3
ME 3355	System Dynamics	3
ME 4415	Model Theory	3
ME 4421/5521	Engineering Modeling, Analysis, & Simulation	3
ME 4425/5525	Mechatronics	3
ME 4464/5564	Engineering Numerical Techniques	3

**For students interested in focusing their ME degree in the Thermal/Fluids area, suggested electives are:**

Code	Title	Credits
ME 3355	System Dynamics	3
CE 4435	Hydraulic Design	3
ME 4451/5551	Compressible Fluid Flow	3
ME 4421/5521	Engineering Modeling, Analysis, & Simulation	3
ME 4464/5564	Engineering Numerical Techniques	3

**For students interested in focusing their ME degree in the Robotics and Mechanical Design area, suggested electives are:**

Code	Title	Credits
CE 4431	Advanced Mechanics of Solids	3
ME 3353	Manufacturing Processes	3
ME 4425/5525	Mechatronics	3
ME 4421/5521	Engineering Modeling, Analysis, & Simulation	3
ME 4464/5564	Engineering Numerical Techniques	3

**For students interested in focusing their ME degree in the Energy area, suggested electives are:**

Code	Title	Credits
ME 4421/5521	Engineering Modeling, Analysis, & Simulation	3
ME 4464/5564	Engineering Numerical Techniques	3
NE 3301	Nuclear Engineering I	3
NE 3302	Nuclear Engineering II	3
NE 4419	Energy Systems and Nuclear Power	3

**Degree Totals** (<http://coursecat.isu.edu/graduate/scienceengineering/mechanicalengineering/#text>)

Code	Title	Credits
	Program Admission Requirements	0
	General Education	40
	Major Requirements (Required General Education credits removed)	83-84

Master of Science in Mechanical Engineering (<http://coursecat.isu.edu/graduate/scienceengineering/mechanicalengineering/#text>)