

# MECHANICAL ENGINEERING

126-128 Semester Hours

Effective Fall 2021  
(updated 4-21-21)

## LOWER-DIVISION COURSES

FALL		SPRING	
*FST 101 – Succeeding & Engaging at SIUE	1	ENG 102 – English Composition II <sup>3</sup>	3
IE 106 – Engineering Problem Solving	3	ACS 103 – Interpersonal Communication Skills <sup>4</sup> (EUSC)	3
CHEM 131 – Engineering Chemistry <sup>+</sup> (BPS)	4	MATH 152 – Calculus II (BPS)	5
CHEM 135 – Engineering Chemistry Lab <sup>+</sup> (EL)	1	PHYS 141 – Physics I for Engineering <sup>++</sup> (BPS)	3
ENG 101 – English Composition I <sup>1</sup>	3	PHYS 151L – University Physics Lab I <sup>++</sup> (EL)	1
MATH 150 – Calculus I <sup>2</sup> (QR)	5		
TOTAL	17	TOTAL	15
FALL		SPRING	
CE 204 – Engineering Graphics & CAD	3	ME 262 – Dynamics	3
CE 240 – Statics	3	CE 242 – Mechanics of Solids	3
MATH 250 – Calculus III (BPS)	4	ECE 210 – Electrical Circuits	3
PHYS 142 – Physics II for Engineering <sup>++</sup> (BPS)	3	ECON 111 – Macroeconomics (BSS)	3
PHYS 152L – University Physics Lab II <sup>++</sup> (EL)	1	MATH 305 – Differential Equations I (BPS)	3
		CS 145 – Intro to Computing for Engineers <sup>+++</sup>	3
		Application for Upper Division	0
TOTAL	14	TOTAL	18

Admission to upper-division requires satisfactory completion of lower-division core courses (see reverse side and/or catalog for specific requirements). An ‘APPLICATION FOR ADMISSION TO UPPER-DIVISION’ must also be completed and approved. This application is available online and in the Engineering Student Services Office.

## UPPER-DIVISION COURSES

FALL		SPRING	
ME 310 – Thermodynamics I	3	ME 312 – Thermodynamics II	3
ME 315 – Fluid Mechanics	3	ME 356 – Dynamic Systems Modeling	3
ME 350 – Mechanisms	3	ME 380 – Design of Machine Elements	3
ME 354 – Numerical Simulation	1	ME 380L – Stress Laboratory	1
ME 370 – Materials Engineering	3	PHIL 323 – Engr Ethics and Prof (BHUM) <sup>5</sup>	3
Breadth-Fine & Performing Arts (BFPA)	3	STAT 380 – Statistics for Applications (BICS)	3
TOTAL	16	TOTAL	16
FALL		SPRING	
ME 410 – Heat Transfer	3	ME 356L – Dynamical Systems Laboratory	1
ME 410L – Thermal Science Laboratory	1	ME 484 – Mechanical Engineering Design II	2
ME 482 – Mechanical Engineering Design I	2	ME Elective II	3
ME Elective I	3	ME Elective III	3
IE 345 – Engineering Economic Analysis	3	Breadth-Life Science <sup>7</sup> (BLS)	3
Interdisciplinary Studies (IS) <sup>6</sup> (EGC) <sup>6</sup> (EUSC) <sup>6</sup>	3	ENGINEERING Elective <sup>8</sup>	3
Health Experience <sup>7</sup> (EH)	0/2		
TOTAL	15/17	TOTAL	15

**Declaration of Major:** Students interested in any of the majors offered by the School of Engineering should seek advisement from the School of Engineering when they initially enroll in the University and should declare a major as soon as possible. Students admitted to programs offered by the School of Engineering shall have met University admission requirements, successfully completed any required academic development and high school deficiency courses, eligibility to enroll in MATH 125 – Pre-Calculus, and have a cumulative GPA of 2.0 or better in any completed University course work.

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION.  
FOR MORE INFORMATION CONTACT

THE MECHANICAL AND INDUSTRIAL ENGINEERING DEPARTMENT OFFICE: (618) 650-3389.

\*FST 101 – for first time freshmen only. Must be taken in the first semester.

\*CHEM 121A and CHEM 125A are acceptable substitutes in lieu of CHEM 131 and CHEM 135.

\*\*Physics I for Engineering - co-requisites: MATH 152 and PHYS 151L. prerequisites: ACT Math subscore of 28 or higher *or* high school physics grade of B or higher *or* Physics Readiness Exam Score 09 *or* PHYS 140.

\*\*Physics II for Engineering - prerequisites: PHYS 141 with a grade of C or higher *or* PHYS 151 with a grade of C or higher; MATH 152 with a grade of C or higher; PHYS 151L with a grade of C or higher.

\*\*\* CS 140 is an acceptable substitute in lieu of CS 145.

<sup>1</sup>ENG 101 must be successfully completed within the First 30 Hours.

<sup>2</sup>Quantitative Reasoning (QR) 101 must be successfully completed within the First 60 Hours. MATH 150 successfully completed (with a grade of 'C' or better) will fulfill this requirement.

<sup>3</sup>ENG 102 must be successfully completed within the First 45 Hours.

<sup>4</sup>ACS 103 must be successfully completed within the First 30 Hours. ACS 103 can be used as a Foundations course, and will also fulfill the EUSC requirement. If ACS 101 is taken instead of ACS 103, the EUSC requirement will have to be met by another appropriate course.

<sup>5</sup>PHIL 323 will fulfill the RA 101 requirement.

<sup>6</sup>Interdisciplinary Studies (IS) Courses must be taken at the junior/senior level class standing. This requirement is not waived with completion of transfer associate degree or IAI-GECC. It is recommended that students choose a course to meet this general education requirement and Global Cultures (EGC). Selecting one of the following: IS 324, 326, 336, 340, 352, 353, 363, 375, 377, 400 or 401 will satisfy both the requirement of an IS course and the GLOBAL CULTURES (GC) requirements. In addition, IS 352 and 375 will fulfill the EGC, EUSC and IS requirements. If a course is not selected that meets two general education requirements, then a course from the list of GC courses must also be taken.

<sup>7</sup>Students may be able to complete the Health Experience (EH) as an approved project or activity; if so, an additional course is not needed. (See academic advisor for approved project or activity). In addition, \*BIOL 203 or \*BIOL 205 will fulfill a BLS and EH requirement. \*Prerequisite/s required courses.

<sup>8</sup>The Mechanical Engineering department will accept any 300 or 400-level course from CE, ECE, IE, and MRE departments/programs as an Engineering Elective for the Mechanical Engineering degree program as long as courses with duplicate contents are avoided. Only 400-level ME courses can be used as Engineering Electives. Construction Management, Computer Science, and courses from outside of the School of Engineering will not be accepted as Engineering Electives for the Mechanical Engineering.

#### ME ELECTIVES

Not all elective courses are offered every year. The courses to be offered are selected from the list below on the basis of student demand and faculty availability.

#### **Fall**

ME 414, ME 417, ME 458, ME 492 (mobile robot, limited to 10 seats)

#### **Spring**

ME 418 (odd year), ME 419 (even year), ME 427, 450, 470; IE 375.

#### **Summer**

ME 417, ME 418, ME 419, ME 452, ME 454, ME 466

#### **Offer pattern of required engineering classes**

CE 204 (F,S), CE 240 (F,S,Su), CE 242 (F,S,Su), CS 145 (F,S,Su), CS 140 (may be used to substitute for CS 145) (F,S,Su), ECE 210 (F,S,Su), IE 345 (F,S,Su), ME 262 (F,S,Su), ME 310 (F,Su), ME 312 (F,S), ME 315 (F, S), ME 350 (F, Su), ME 354 (F, S), ME 356 (F, S), ME 356L (F,S), ME 370 (F, S), ME 380 (F, S), ME 380L (S), ME 410 (F,S), ME 410L (F, S), ME 482 (F,S), ME 484 (F,S, must be taken right after ME 482), Phil 323 (F,S).

#### **ENROLLMENT IN UPPER-DIVISION ME COURSES**

A student must be admitted to Upper-Division before taking any 300 or 400 level ME courses. An **APPLICATION FOR ADMISSION TO UPPER-DIVISION** must be submitted by the deadline, to the academic advisor. A student enrolled in any 300 or 400 level ME course may be asked to drop if he or she has not been admitted to Upper-Division by the time the class starts.

#### **The criteria for admission to the ME Upper-Division Program are:**

1. A completed application for upper-division;
2. Satisfactory completion of all university and School of Engineering admission requirements;
3. Satisfactory completion of english, speech, chemistry, mathematics, and physics courses shown in the first two years of the program with a GPA of 2.0 for non-transfer students, transfer students from articulated programs and Illinois resident transfer students, or a GPA of 2.25 for other transfer students;
4. A GPA of 2.0 or better in ME 262, CE 240, CE 242 and ECE 210;
5. A grade of C or better in ME 262, CE 240, Eng 101 and Eng 102.

#### **University Requirements (Non-General Education)**

- Bachelor of Science Degree Requires completion of 8 lecture courses in life (BLS\* or LS\*), physical (BPS\* or PS\*) or social science (BSS\* or SS\*) including 2 with labs (EL\*)
- Minimum of 120 semester hours must be completed.
- Minimum GPA of 2.0 must be achieved.

\*Approved courses are identified in the catalog with this designation. Lists of approved classes may also be obtained at [siue.edu/registrar/genedguides.shtml](http://siue.edu/registrar/genedguides.shtml).