

# RECOMMENDED MECHANICAL ENGINEERING CURRICULUM FLOW CHART

Effective for Students Entering ME September 2024 or Later

Semesters							
I	II	III	IV	V	VI	VII	VIII
<div>5</div> <div><b>MATH 221</b> Calculus I</div>	<div>4</div> <div><b>MATH 222</b> Calculus II</div> <div>(Math 221)</div>	<div>4</div> <div><b>MATH 234</b> Calculus III</div> <div>(Math 222)</div>	<div>3</div> <div><b>MATH 320</b> Linear Alg/ Diff Eqns</div> <div>(Math 222)</div>	<div>3</div> <div><b>ME 331</b> Geometric Modeling</div> <div>(CS 200/220/300, Math 320/340, EMA 303 or co-enroll, ME 231, EMA 202)</div>	<div>3</div> <div><b>ME 342</b> Machine Elements</div> <div>(EMA 303, ME 331 or co-enroll)</div>	<div>H</div> <div>3</div> <div><b>ME 351</b> Design Projects I</div> <div>(ME 331)</div>	<div>H</div> <div>3</div> <div><b>ME 352</b> Design Projects II</div> <div>(ME 351)</div>
<div>A</div> <div>5</div> <div><b>CHEM 109</b> Advanced General Chemistry</div>		<div>4</div> <div><b>CS 220</b> Intro to Data Programming</div>		<div>I</div> <div>3</div> <div><b>ME 361</b> Thermo</div> <div>(Chem 103, EMA 201)</div>	<div>3</div> <div><b>ME 363</b> Fluids</div> <div>(Math 319/320, ME 361)</div>	<div>3</div> <div><b>ME 364</b> Heat Transfer</div> <div>(ME 361, ME 363 or co-enroll)</div>	
OR							
<div>A</div> <div>4</div> <div><b>CHEM 103</b> General Chemistry I</div>	<div>I</div> <div>3</div> <div><b>EMA 201</b> Statics</div> <div>(Math 222 or co-enroll)</div>	<div>G I</div> <div>3</div> <div><b>EMA 303</b> Mechanics of Materials</div> <div>(EMA 201)</div>	<div>I</div> <div>3</div> <div><b>EMA 202</b> Dynamics</div> <div>(EMA 201)</div>	<div>3</div> <div><b>ME 340</b> Dynamic Systems</div> <div>(Math 319/320, EMA 202)</div>	<div>3</div> <div><b>INTEREGR 397</b> Technical Comm</div> <div>(Junior Standing)</div>	<div>4</div> <div><b>ME 368</b> Measure Lab</div> <div>(EMA 303, ME 361, ME 340, ECE 376 or ME 376)</div>	<div>3</div> <div><b>ME 370</b> Energy Lab</div> <div>(ME 363, ME 364 or co-enroll, ME 368 or co-enroll)</div>
<div>B</div> <div>3</div> <div><b>ME 201</b> Intro to Mechanical Engineering</div>	<div>F</div> <div>3</div> <div><b>Comm-A</b></div>	<div>G</div> <div>1</div> <div><b>ME 307</b> Mechanics of Materials Lab</div> <div>(EMA 303 or co-enroll)</div>	<div>5</div> <div><b>PHYSICS 202</b> General Physics</div> <div>(EMA 201, Math 222)</div>	<div>J K</div> <div>3</div> <div><b>Math/ Science Elective</b></div>			
	<div>3</div> <div><b>ME 231</b> Intro to Engineering Graphics</div>		<div>3</div> <div><b>MS&amp;E 350</b> Intro to Materials Science</div> <div>(Chem 103)</div>	<div>3</div> <div><b>ME 310</b> Mfg Processes</div> <div>(EMA 303, ME 231)</div>	<div>4</div> <div><b>ME 376</b> Mechatronics</div> <div>(ME 340 or co-enroll, Math 320/319, Physics 202/208)</div>	<div>E</div> <div>3</div> <div><b>Technical Elective</b></div>	<div>E</div> <div>3</div> <div><b>Technical Elective</b></div>
			<div>3</div> <div><b>STAT 324</b> Statistics</div> <div>(Math 221)</div>		<div>3</div> <div><b>ME 311</b> Mfg Fundamentals</div> <div>(MS&amp;E 350, ME 231, EMA 303)</div>	<div>E</div> <div>3</div> <div><b>Technical Elective</b></div>	<div>E</div> <div>3</div> <div><b>Technical Elective</b></div>
			OR				
<div>D</div> <div>3</div> <div><b>Liberal Studies Elective</b></div>	<div>D</div> <div>3</div> <div><b>Liberal Studies Elective</b></div>	<div>D</div> <div>3</div> <div><b>Liberal Studies Elective</b></div>	<div>3</div> <div><b>ISYE 210</b> Intro to Industrial Statistics</div> <div>(Math 221)</div>	<div>D</div> <div>3</div> <div><b>Liberal Studies Elective</b></div>			<div>D</div> <div>3</div> <div><b>Liberal Studies Elective</b></div>
15-16	16	15	17	18	16	16	15

Letters appearing in upper-left corner refer to notes on page 2.

Pre-requisites are listed in parentheses.

## FLOW CHART SUBSCRIPTS

- A. CHEMISTRY.** There are two options for the chemistry requirement:
1. CHEM 103 (4 credits).
  2. CHEM 109 (5 credits).
- B. INTRODUCTION TO ENGINEERING.** ME 201 (3 credits) satisfies the Mechanical Engineering requirement for introduction to engineering.
- C. TOTAL CREDITS REQUIRED.** Students fulfilling their course requirements with fewer than 128 credits must take additional free-elective credits to comply with the 128-credit minimum graduation requirement.
- D. LIBERAL STUDIES Requirements.** Students must take 15 credits that carry H, S, L, or Z breadth designators. These credits must fulfill the following sub requirements:
1. A minimum of 2 courses from the same department or program. At least 1 of these 2 courses must be designated as above the elementary level (I, A, or D).
  2. A minimum of 6 credits designated as humanities (H, L, or Z), and an additional minimum of 3 credits designated as social studies (S or Z). Foreign Language courses count as H credits. Retroactive credits for language courses may not be used to meet this Liberal Studies requirement.
  3. At least 3 credits in courses designated as ethnic studies (lower case "e"). These courses may help satisfy requirements D1 and D2 as well, but they only count once toward the total required.
- Note: Some courses may have "e" designation but not have H, S, L, or Z designation; these courses do not count toward the liberal studies requirement.
- E. TECHNICAL ELECTIVES.**
- The Mechanical Engineering curriculum requires a total of 12 credits of technical electives. A minimum of 9 of these 12 credits must come from formal courses. A formal course is defined as a course that meets regularly in a lecture format to study a selected topic. The educational mission is assisted with homework and exams. Formal courses include those in an online format but do not include seminar, survey, or other similar courses.
1. Formal ME. A minimum of 3 (of the required 9) formal course credits must come from Mechanical Engineering Courses with course numbers 400 or higher.
  2. Formal Non-ME. Up to 9 technical elective credits may be earned for formal course outside the Mechanical Engineering department. These courses may be engineering, mathematics, physics, chemistry, statistics, or computer science courses numbered 400 and above. Some courses numbered below 400 and specific EPD and InterEgr courses are also accepted as technical electives. These courses can be found on [Guide](#) under "Technical Electives." Other courses may be accepted if approved by the Curriculum Committee in advance of taking the course.
  3. Non-formal. Up to 3 technical elective credits may be obtained for non-formal courses such as independent study courses (ME 489, 491, 492, and other engineering independent study courses numbered 399 and higher); and Cooperative Education (ME 001).
  4. Specializations. Students may obtain a BioMEchanics, Sustainable Energy, or Human Centered Design Specialization by taking 12 technical elective credits from the listing of specialization technical elective courses. Students interested in specializing in BioMEchanics, Sustainable Energy, or Human Centered Design should use the course recommendations located on the [ME Intranet](#) under ME Specialization.
- F. COMMUNICATION-A REQUIREMENT.** Any course designated as Comm-A satisfies this requirement. Students whose GER communications Part A is satisfied are exempt from this requirement. (See note C)
- G. EMA 303 and ME 307.** EMA 303 must be taken before or concurrently with ME 307.
- H. ME 351 and ME 352.** Students should plan to take ME 351 and ME 352 consecutively, preferably their last two semesters. This senior design sequence can be taken fall-spring or spring-fall.
- I. EMA 201, EMA 202, EMA 303, and ME 361 each require a minimum grade of C.**
- J. MATH/SCIENCE ELECTIVE.** The mechanical engineering curriculum requires 3 credits of math/science electives. CHEM 104 or CHEM 109, any formal course listed as a biological science and numbered 100 or higher, any non-engineering formal course listed with physical or natural science breadth and numbered 200 or higher will satisfy this requirement. If the math/science auxiliary credit condition (30 credits) is met with additional coursework, the math/science elective requirement may be met with a formal course offered by an engineering department numbered 200 and above (except InterEGR and E P D).
- K. Students must meet the math/science auxiliary credit condition with a minimum of 30 credits.** If Mathematics/Statistics, Basic Science (except Comp Sci credits), and Math/Science elective are completed fewer than 30 credits combined, then additional Math/Science credits may be needed to meet the math/science auxiliary credit condition.

### SPECIAL NOTES

1. Students enrolled in fewer than 12 credits must have Dean's permission to be in part-time status.
2. Questions concerning this curriculum should be directed to Student Services (1410 Engineering Dr., Suite 170).
3. The Mechanical Engineering department's website can be found at <https://engineering.wisc.edu/departments/mechanical-engineering/>.
4. Official degree requirements can be found by running a DARS and at <https://guide.wisc.edu/undergraduate/engineering/mechanical->