

# Mechanical Engineering 2020–2021 Undergraduate Curriculum

Total Credits: 123/125

1st Year	FALL 16 Credits	<b>MATH 171</b> [3-3-4] (C) * Calculus I {ALEKS Placement = 83%}	<b>CHEM 105</b> [3-3-4] (C) * Principles of Chemistry I {ALEKS Placement = 80%}	<b>ENGR 120</b> [1-3-2] Innovation in Design {ALEKS Placement = 70%}	<b>ENGL 101</b> [3-0-3] College Composition {Writing Placement}	<b>[ARTS]</b> [3-0-3] Any Course Under “ARTS” from UCORE <sup>1</sup>	
	SPRING 15 Credits	<b>MATH 172</b> [3-3-4] (C) * Calculus II {MATH 171}	<b>ECONS 102</b> [3-0-3] Macro-Economics {ALEKS Placement = 40%}	<b>ME 116</b> [0-6-2] (C) * Engineering CAD & Visualizations {MATH 171 or c//}	<b>HIST 105</b> [3-0-3] Roots of Contemporary Issues	<b>[BSCI]</b> [3-0-3] Any Course Under “BSCI” from UCORE <sup>1</sup>	
2nd Year	FALL 16/18 Credits	<b>MATH 220</b> [2-0-2] (C) * Linear Algebra {MATH 171 or c//}	<b>MATH 273</b> [2-0-2] (C) * Calculus III {MATH 172}	<b>PHYSICS 201</b> [3-3-4] (C) * Physics for Scientists & Engineers I {MATH 172 or c//}	<b>CE 211</b> [3-0-3] (C) * Statics {MATH 172 or c//, PHYSICS 201 or c//}	<b>EE 221 [2-0-2] (C) *</b> Numerical Computing for Engineers, <b>CPT_S 121 [3-3-4] (C) *</b> Program Design & Development C++, <b>or CPT_S 131 [3-3-4] (C) *</b> Program Design & Development Java (See Catalog)	<b>MSE 201</b> [3-0-3] (C) * Materials Science {CHEM 105, PHYSICS 201 or c//}
	SPRING 16 Credits	<b>MATH 315</b> [3-0-3] (C) * Differential Equations {MATH 273, MATH 220 or c//}	<b>PHYSICS 202</b> [3-3-4] (C) * Physics for Scientists & Engineers II {PHYSICS 201}	<b>CE 215</b> [3-0-3] (C) * Mechanics of Materials {CE 211}	<b>ME 212</b> [3-0-3] (C) * Dynamics {CE 211}	<b>ME 216</b> [0-6-2] (C) * Integrated CAD Design {ME 116, CE 215 or c//}	<b>ME 220</b> [0-3-1] (C) * Materials Lab {CE 215 or c//}
3rd Year	FALL 16 Credits	<b>STAT 370</b> [3-0-3] (C) * Statistics for Engineers {MATH 172}	<b>EE 261</b> [3-0-3] (C) * Electrical Circuits I {MATH 315 or c//, PHYSICS 202}	<b>EE 262</b> [0-3-1] (C) * Electrical Circuits Lab I {EE 261 or c//}	<b>ME 301</b> [3-0-3] (C) * Fundamentals of Thermodynamics {PHYSICS 201}	<b>ME 303</b> [3-0-3] (C) * Fluid Mechanics {ME 212}	<b>ME 313</b> [2-3-3] (C) * Engineering Analysis {MATH 315 or c//, CE 215, ME 116, EE 221 or CPT_S 121 or CPT_S 131}
	SPRING 17 Credits	<b>ENGL 402</b> [3-0-3] Technical Writing {Junior Standing [60 Credits]}	<b>ME 304</b> [3-0-3] (C) * Heat Transfer {ME 301, ME 303, MIE}	<b>ME 306</b> [1-3-2] (C) * Thermal & Fluids Lab {ME 301, ME 303, STAT 370 or c//, MIE}	<b>ME 316</b> [3-0-3] (C) * Mechanical Comp. Analysis & Design {CE 215, ME 216 or c//, ME 220 or c//, MIE}	<b>ME 348</b> [3-0-3] (C) * Dynamic Systems {ME 212, ME 313, MIE}	<b>ME Restricted Elective</b> [3-0-3] (C) * ME 312, ME 401, or ME 405. See Concentrations
4th Year	FALL 15 Credits	<b>[DIVR]</b> [3-0-3] Any Course Under “DIVR” from UCORE <sup>1</sup>	<b>ME 415</b> [3-0-3] (C) * Engineering Design {ME 316 or c//, MIE}	<b>ME Restricted Elective</b> [3-0-3] (C) * ME 312, ME 401, or ME 405. See Concentrations	<b>ME Technical Elective</b> [3-0-3] (C) * ME or MSE (400–500) BE 425, or EECS not in major. See List Below <sup>2</sup>	<b>ME Technical Elective</b> [3-0-3] (C) * ME or MSE (400–500) BE 425, or EECS not in major. See List Below <sup>2</sup>	
	SPRING 12 Credits	<b>[HUM]</b> [3-0-3] Any Course Under “HUM” from UCORE <sup>1</sup>	<b>ME 406</b> [1-6-3] (C) * Experimental Design {ENGL 402 or c//, ME 220, ME 304, ME 306, ME 348, MIE}	<b>ME Technical Elective</b> [3-0-3] (C) * ME or MSE (400–500), BE 425, or EECS not in major. See List Below <sup>2</sup>	<b>ME 416</b> [1-6-3] (C) * Mechanical Systems Design {ME 304, ME 348, ME 415, MIE}		

**Admit to Major Requirements:** MATH 171 ready (A minimum of 83% ALEKS, AP Calculus test score of 2, or MATH 106 and 108 with a C)

**Benchmarks to Stay in the Major:** Earn a C or higher in all major classes and a maintain a 2.60 or higher major GPA<sup>4</sup>

## Concentrations for Mechanical Engineering

After taking general educational courses and required mechanical engineering (ME) core courses, students can follow a general path, or seek a concentration in thermo-fluids, manufacturing, or autonomous control. After taking two restricted electives, students need to take at least three technical electives. Additional courses that may be counted as ME technical electives are listed in the catalog.

	General Path (No Concentration)	Thermo-fluids	Manufacturing	Autonomous Systems
<b>2nd/Sophomore Year: Take 1</b>	EE 221, CPT_S 121, or CPT_S 131	EE 221, CPT_S 121, or CPT_S 131	EE 221, CPT_S 121, or CPT_S 131	CPT_S 121 or CPT_S 131
<b>Restricted Electives: Take 2</b>	ME 312, ME 401, or ME 405	ME 405, Thermal Systems Design (required), ME 312 or ME 401	ME 312, Manufacturing Engineering (required), ME 401 or ME 405	ME 401, Mechatronics (required), ME 312 or ME 405
<b>Technical Electives: Take 3 for Concentrations</b>	Any technical electives allowed for ME program; see catalog.	ME 419, Air Conditioning, ME 431, Design of Solar Thermal Systems, ME 436, Combustion Engines, ME 439, Applied Aerodynamics	ME 474, Design for Manufacture and Modern Mfg. Strategies, ME 475, Manufacturing Enterprise Systems – Automation and Product Realization	ME 481, Control Systems, Intro to Robotics & Artificial Intelligence, CPT_S 122, C++, CPT_S 132, Java

See next page for footnotes and table key. This document is for unofficial planning purposes.

**Notes**

Review the [Washington State University Catalog](#) for course pre-requisites and grade requirements.

<sup>1</sup> [WSU Undergraduate Education UCORE](#)

<sup>2</sup> ME Technical Electives: [ME](#) or [MSE](#) (400–500 level), [BIO ENG 425](#), or any [EECS](#) courses not in the major (students must choose 9 credits). ME 407, 413, 419, 431, 436, 439, 449, 461, 474, 475, 481, 501, 502, 503, 507, 509, 513, 514, 515, 516, 517, 520, 521, 525, 526, 527, 530, 531, 532, 534, 537, 540, 556, 565, 574, 575, 581. MSE 401, 404, 406, 413, 505, 506, 507, 508, 509, 513, 514, 515, 516, 517, 520, 521, 523, 530, 532, 534, 544, 545, 546, 547, 548, 592

<sup>3</sup> ME Restricted Electives: ME 312, ME 401, ME 405 (students must choose 6 credits)

<sup>4</sup> Major courses required for the ME degree include all engineering, physics, chemistry, and math courses listed in the schedule of studies. Only one repeat of MME courses is allowed.

ME majors are required to complete the [Fundamentals of Engineering \(FE\) Exam](#).

MME students are required to complete the senior exit survey.

**Key**

\* = Grade calculated for ENGR GPA

[ ] = Lecture Hours – Lab Hours – **Total Credits**

( ) = Minimum Grade Required

{ } = Course Pre-requisites

c// = Concurrent Enrollment

MIE = Admitted to the Mechanical Engineering Major

