

Mechanical Engineering 2020–2021 Undergraduate Curriculum

Total Credits: 123/125

1 st Year	FALL 16 Credits	MATH 171 [3-3-4] (C) * Calculus I {ALEKS Placement = 83%}	CHEM 105 [3-3-4] (C) * Principles of Chemistry I {ALEKS Placement = 80%}	ENGR 120 [1-3-2] Innovation in Design {ALEKS Placement = 70%}	ENGL 101 [3-0-3] College Composition {Writing Placement}	[ARTS] [3-0-3] Any Course Under "ARTS" from UCORE ¹	
	SPRING 15 Credits	MATH 172 [3-3-4] (C) * Calculus II {MATH 171}	ECONS 102 [3-0-3] Macro-Economics {ALEKS Placement = 40%}	ME 116 [0-6-2] (C) * Engineering CAD & Visualizations {MATH 171 or c//}	HIST 105 [3-0-3] Roots of Contemporary Issues	[BSCI] [3-0-3] Any Course Under "BSCI" from UCORE ¹	
2 nd Year	FALL 16/18 Credits	MATH 220 [2-0-2] (C) * Linear Algebra {MATH 171 or c//}	MATH 273 [2-0-2] (C) * Calculus III {MATH 172}	PHYSICS 201 [3-3-4] (C) * Physics for Scientists & Engineers I {MATH 172 or c//}	CE 211 [3-0-3] (C) * Statics {MATH 172 or c//, PHYSICS 201 or c//}	EE 221 [2-0-2] (C) * Numerical Computing for Engineers, CPT_S 121 [3-3-4] (C) * Program Design & Development C++, or CPT_S 131 [3-3-4] (C) * Program Design & Development Java (See Catalog)	MSE 201 [3-0-3] (C) * Materials Science {CHEM 105, PHYSICS 201 or c//}
	SPRING 16 Credits	MATH 315 [3-0-3] (C) * Differential Equations {MATH 273, MATH 220 or c//}	PHYSICS 202 [3-3-4] (C) * Physics for Scientists & Engineers II {PHYSICS 201}	CE 215 [3-0-3] (C) * Mechanics of Materials {CE 211}	ME 212 [3-0-3] (C) * Dynamics {CE 211}	ME 216 [0-6-2] (C) * Integrated CAD Design {ME 116, CE 215 or c//}	ME 220 [0-3-1] (C) * Materials Lab {CE 215 or c//}
3 rd Year	FALL 16 Credits	STAT 370 [3-0-3] (C) * Statistics for Engineers {MATH 172}	EE 261 [3-0-3] (C) * Electrical Circuits I {MATH 315 or c//, PHYSICS 202}	EE 262 [0-3-1] (C) * Electrical Circuits Lab I {EE 261 or c//}	ME 301 [3-0-3] (C) * Fundamentals of Thermodynamics {PHYSICS 201}	ME 303 [3-0-3] (C) * Fluid Mechanics {ME 212}	ME 313 [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	ENGL 402 [3-0-3] Technical Writing {Junior Standing [60 Credits]}	ME 304 [3-0-3] (C) * Heat Transfer {ME 301, ME 303, MIE}	ME 306 [1-3-2] (C) * Thermal & Fluids Lab {ME 301, ME 303, STAT 370 or c//, MIE}	ME 316 [3-0-3] (C) * Mechanical Comp. Analysis & Design {CE 215, ME 216 or c//, ME 220 or c//, MIE}	ME 348 [3-0-3] (C) * Dynamic Systems {ME 212, ME 313, MIE}	ME Restricted Elective [3-0-3] (C) * ME 312, ME 401, or ME 405. See Concentrations
4 th Year	FALL 15 Credits	[DIVR] [3-0-3] Any Course Under "DIVR" from UCORE ¹	ME 415 [3-0-3] (C) * Engineering Design {ME 316 or c//, MIE}	ME Restricted Elective [3-0-3] (C) * ME 312, ME 401, or ME 405. See Concentrations	ME Technical Elective [3-0-3] (C) * ME or MSE (400–500), BE 425, or EECS not in major. See List Below ²	ME Technical Elective [3-0-3] (C) * ME or MSE (400–500), BE 425, or EECS not in major. See List Below ²	
	SPRING 12 Credits	[HUM] [3-0-3] Any Course Under "HUM" from UCORE ¹	ME 406 [1-6-3] (C) * Experimental Design {ENGL 402 or c//, ME 220, ME 304, ME 306, ME 348, MIE}	ME Technical Elective [3-0-3] (C) * ME or MSE (400–500), BE 425, or EECS not in major. See List Below ²	ME 416 [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 GPA⁴

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. Students must take two restricted electives and then at least three technical electives, two of which must be from their concentration of choice.

	Computer Programming: Take 1	Restricted Electives: Take 2	Technical Electives for Concentrations: Take 2	Technical Elective of Student's Choice: Take 1
General Path	EE 221, CPT_S 121, or CPT_S 131	ME 312, ME 401, or ME 405	Any technical electives allowed for ME program; see catalog.	Any technical electives allowed for ME program; see catalog.
Thermo-fluids	EE 221, CPT_S 121, or CPT_S 131	ME 405, Thermal Systems Design (required), ME 312 or ME 401	ME 419, Air Conditioning, ME 431, Design of Solar Thermal Systems, ME 436, Combustion Engines, ME 439, Applied Aerodynamics	Any technical electives allowed for ME program; see catalog.
Manufacturing	EE 221, CPT_S 121, or CPT_S 131	ME 312, Manufacturing Engineering (required), ME 401 or ME 405	ME 474, Design for Mfg. and Modern Mfg. Strategies, ME 475, Manufacturing Enterprise Systems – Automation and Product Realization	Any technical electives allowed for ME program; see catalog.
Autonomous Systems	CPT_S 121 or CPT_S 131	ME 401, Mechatronics (required), ME 312 or ME 405	ME 481, Control Systems, Intro to Robotics & Artificial Intelligence, CPT_S 122, C++, CPT_S 132, Java	Any technical electives allowed for ME program; see catalog.

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.

¹ [WSU Undergraduate Education UCORE](#)

² 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, 462, 466, 472, 473, 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, 581. MSE 401, 402, 403, 404, 406, 413, 483, 505, 506, 507, 508, 509, 513, 514, 515, 516, 517, 520, 521, 523, 530, 534, 537, 543, 544, 546, 547, 548, 592

³ ME Restricted Electives: ME 312, ME 401, ME 405 (students must take 6 credits)

⁴ 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

