Mechanical Engineering Degree Requirements (2020-2021)

The minimum total semester credit hours (credits) required for a BS degree in Mechanical Engineering is **126**.

General Education Core Courses 42 credits

Communication (6 credits): ENGL 1301 and ENGL 1302
Mathematics (3 credits): MATH 2413*
Life and Physical Sciences (6 credits): CHEM 1311 and PHYS 2325
Language, Philosophy, and Culture (3 credits): choose one from ENGL 2322, 2323, 2327, 2328; UNIV 1301, 1302
Creative Arts (3 credits): choose one from ARTS 1301, DRAM 1310, MUSI 1306, or MUSI 2310
American History (6 credits): HIST 1301, 1302
Government/Political Science (6 credits): PLSC 2305, 2306
Social and Behavioral Sciences (3 credits): Choose one from ECON 2301, LEAD 1301, PSYC 1301, or SOCI 1301
Component Area Option (6 credits): CHEM 1111, COMM 1315, MATH 2413*, PHYS 2125

* Three credits of MATH 2413 fulfill the Mathematics requirement, one credit is assigned to the Component Area Option.

Computer Use: Mechanical Engineering students obtain skills in using computers in ENGR 1204 and MENG 3348.

Mechanical Engineering Program Description

The mechanical engineer may design a component, a machine, a system or a process. Mechanical engineers analyze their design using the principles of physics to insure the product functions safely, efficiently, reliably, and can be manufactured at a competitive cost. Mechanical engineers work in automotive, aerospace, chemical, computer, communication, paper, and power generation industries. Mechanical engineers are found in virtually any manufacturing industry.

Mechanical Engineering Lower Division Required Courses 23 Credits

MATH 2414 – Calculus II
MATH 2415 – Calculus III
PHYS 2326 – University Physics II
PHYS 2126 – University Physics II Laboratory
ENGR 1204 – Engineering Graphics
ENGR 2301 – Engineering Mechanics: Statics
ENGR 2302 – Engineering Mechanics: Dynamics
ENGR 2305 – Fundamentals of Circuit Analysis

Mechanical Engineering Upper Division Required Courses 55 Credits

MATH 3301 – Introduction to Probability I
MATH 3310 – Linear Algebra
MATH 3320 – Differential Equations
ENGR 3303 – Introduction to Material Science
ENGR 3326 – Engineering Economics
ENGR 3332 – Mechanics of Materials
ENGR 3354 – Introduction to Fluid Mechanics
ENGR 3375 – Introduction to Thermodynamics
ENGR 3390 – Engineering Programming
MENG 3206 – Mechanical Engineering Laboratory I
MENG 3324 – Manufacturing Processes
MENG 3348 – Computer-Aided Mechanical Engineering Design
MENG 3351 – Heat Transfer
MENG 3356 – Fluid Mechanics II
MENG 3364 – Mechanical Design I
MENG 3376 – Thermodynamics II
MENG 4205 – Thermo-fluid and Mechanical Systems Laboratory
MENG 4206 – Mechanical Engineering Laboratory II
MENG 4478 – Senior Design

Mechanical Engineering Upper Division Electives 6 Credits

Choose any two 3000 or 4000–level AERO, MENG or NENG courses not used above.

DEGREE PLAN: BS in Mechanical Engineering

Freshman Year

Fall		Hours	Spring		Hours
ENGL 1301	Composition I	3	ENGL 1302	Composition II	3
HIST 1301	History of the U.S. to 1877	3	HIST 1302	History of U.S. Since 1877	3
MATH 2413	Calculus I	4	COMM 1315	Intro. to Public Speaking	3
CHEM 1311	General Chemistry I	3	MATH 2414	Calculus II	4
CHEM 1111	General Chemistry I Lab	1	PHYS 2325	University Physics I	3
ENGR 1204	Engineering Graphics	2	PHYS 2125	University Physics I Lab	1
		16			17

Sophomore Year

Fall		Hours	Spring		Hours
PLSC 2305	American National Politics	3	MATH 3301	Introduction to Probability I	3
Creative Arts Course		3	MATH 3320	Differential Equations	3
MATH 2415	Calculus III	4	ENGR 3303	Introduction to Materials Science	3
PHYS 2326	University Physics II	3	ENGR 2302	Engr. Mechanics: Dynamics	3
PHYS 2126	University Physics II Lab	1	ENGR 2305	Fund. of Circuit Analysis	3
ENGR 2301	Engr. Mechanics: Statics	3			15
		17			

Junior Year

Fall		Hours	Spring		Hours
ENGR 3332	Mechanics of Materials	3	MENG 3348	Comp.-Aided ME Design	3
ENGR 3375	Intro. to Thermodynamics	3	MENG 3351	Heat Transfer	3
ENGR 3354	Intro. to Fluid Mechanics	3	MENG 3356	Fluid Mechanics II	3
ENGR 3390	Engineering Programming	3	MENG 3364	Mechanical Design I	3
MENG 3206	Mechanical Engr. Lab I	2	MENG 3376	Thermodynamics II	3
MATH 3310	Linear Algebra	3			15
		17			

Senior Year

Fall		Hours	Spring		Hours
MENG 3324	Manufacturing Processes	3	ENGR 3326	Engineering Economics	3
MENG 4205	T/F and Mech. Sys. Lab	2	MENG 4206	ME Laboratory II	2
MENG 43xx	Technical Elective	3	MENG 4478	Senior Design	4
MENG 43xx	Technical Elective	3	Language, Philosophy and Culture Course		3
Social and Behavioral Science Course		3	PLSC 2306	State and Local Politics	3
		14			15

Total degree plan hours: 126