

B.S., MECHANICAL ENGINEERING

Program Requirements

Students must earn a C- grade or better in each course.

Minimum Requirements for Mechanical Engineering B.S.: 130 credits

CONCENTRATIONS: AEROSPACE (P. 1), MECHANICAL (P. 1), PETROLEUM (P. 1)

Code	Title	Credits
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General University Requirements

Complete the general university requirements. (<https://catalog.uaf.edu/archives/2020-2021/bachelors/>)

General Education Requirements

Complete the general education requirements. (<https://catalog.uaf.edu/archives/2020-2021/bachelors/general-education-requirements/>)

As part of the general education requirements, complete:

Code	Title	Credits
MATH F251X	Calculus I	
CHEM F105X	General Chemistry I	
CHEM F106X	General Chemistry II	

B.S. Degree Requirements

Complete the B.S. degree requirements. (<https://catalog.uaf.edu/archives/2020-2021/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext>)

As part of the B.S. degree requirements, complete:

Code	Title	Credits
MATH F252X	Calculus II	
PHYS F211X	General Physics I	
PHYS F212X	General Physics II	

Mechanical Engineering Program Requirements

Code	Title	Credits
ES F101	Introduction to Engineering	3
ES F201	Computer Techniques	3
ES F209	Statics	3
ES F210	Dynamics	3
ES F301	Engineering Analysis	3
ES F307	Elements of Electrical Engineering	3
ES F331	Mechanics of Materials	3
ES F341	Fluid Mechanics	4
ES F346	Introduction to Thermodynamics	3
ESM F450	Economic Analysis and Operations	3
MATH F253X	Calculus III	4
MATH F302	Differential Equations	3
ME F302	Dynamics of Machinery	4
ME F308	Instrumentation and Measurement	3
ME F313	Mechanical Engineering Thermodynamics	3
ME F321	Industrial Processes	3
ME F334	Elements of Material Science/Engineering	3
ME F403	Machine Design	3

ME F408	Mechanical Vibrations	3
ME F415	Thermal Systems Laboratory	3
ME F441	Heat and Mass Transfer	3
ME F486	Senior Design ²	1
ME F487	Design Project ^{1,2}	3

Fundamentals of Engineering (FE) Examination

Complete the Fundamentals of Engineering (FE) examination administered by the State of Alaska.

Concentrations

Complete one of the following concentrations: 9-12

Mechanical

Aerospace

Petroleum

¹ Design project must be related to area of concentration.

² Fulfills the baccalaureate capstone requirement.

Concentrations

AEROSPACE

Code	Title	Credits
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Complete the following:

ME F450	Theory of Flight	3
ME F451	Aerodynamics	3
ME F452	Introduction to Astrodynamics	3
ME F453	Propulsion Systems	3

MECHANICAL

Code	Title	Credits
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Complete the following:

Mechanical Engineering electives at the F400-level or above		6
Advisor-approved engineering elective at the F400-level or above		3

PETROLEUM

Code	Title	Credits
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Complete the following:

ME F409	Controls	3
ME F416	Design of Mechanical Equipment for the Petroleum Industry	3
ME F464	Corrosion Engineering	3
PETE F426	Drilling Engineering	3