

B.S./M.S. Degrees for Excellent Mechanical Engineering Students

The Department of Mechanical Engineering offers a new integrated Mechanical Engineering B.S./M.S. degree program for qualified undergraduate students to complete B.S. and M.S. degrees in a shorter time than traditional B.S. plus M.S. degrees. The combined accelerated degree for Mechanical Engineering undergraduate students is designed for students to complete both Bachelor of Science and Master of Science in five years.

Program Requirements

1. Complete the following admission requirements:
 - a. ME major (junior preferred) or senior standing.
 - b. GPA 3.25 or above (based on minimum of 24 credits in ME major requirements). Students must maintain a cumulative GPA of 3.0 to remain in the program.
 - c. Submit three letters of references.
 - d. Submit GRE (general) scores.
 - e. Submit a study goal statement.
 - f. Submit a UAF graduate application for admission.
2. Complete the general university requirements.
3. Complete B.S. degree requirements (As part of the B.S. degree requirements, complete MATH F201X, PHYS F211X and PHYS F212X).
4. Complete the master's degree requirements.
5. Complete the following B.S. program (major) requirements:

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-Basic Thermodynamics	3
ESM F450W-Economic Analysis and Operations	3
MATH F202X-Calculus	4
MATH F302-Differential Equations	3
ME F302-Dynamics of Machinery	4
ME F308-Measurement and Instrumentation	3
ME F313-Mechanical Engineering Thermodynamics	3
ME F321-Industrial Processes	3
ME F334-Elements of Materials Science/Engineering	3
ME F403-Machine Design	3
ME F408-Mechanical Vibrations	3
ME 415W-Thermal Systems Laboratory	3
ME 441-Heat and Mass Transfer	3
ME 487 W,O-Design Project	3

6. Complete the following M.S. program (major) requirements:

ME F631-Advanced Mechanics of Materials	3
ME F634-Advanced Materials Engineering	3
ME F641-Advanced Fluid Mechanics	3

ME F642-Advanced Heat Transfer	3
ME F608-Advanced Dynamics	3

7. Complete the thesis or non-thesis requirements:

Thesis

Complete the following:

ME F699-Thesis	6
Electives*	9

Non-Thesis

Complete the following

ME F698-Project	3
Electives**	12

*At least 3 credits at the graduate level.

**At least 6 credits at the graduate level.

Electives are ME or other engineering, science, or mathematics courses at F400-level or above approved by the student's advisory committee.

8. A minimum of 150 credits is required for both degrees.

Note: This degree program must be completed in 7 years or the student will be disqualified from the program. If a student is disqualified for exceeding the 7 year limit for the fast track degree program, a ME B.S. will be awarded if: 1) completed in 10 years, and 2) meet ME B.S. requirements.

Taken separately, the degrees would require 161 credits (131 B.S. and 30 M.S.). The difference of 11 credits comes from the electives of the B.S. program:

- a. Taking the B.S. degree and the M.S. degree separately, the student needs to take 11 elective credits (6 for ME electives, 3 for technical electives, and 2 for free electives) for the B.S. degree, another 9 or 12 graduate elective credits for the M.S. degree for the non-thesis and thesis option, respectively.
- b. Taking the B.S./M.S. degree, the student needs to take 9 or 12 elective credits (for thesis and non-thesis option, respectively) instead of both B.S. elective credits and M.S. elective credits.

Sample Five-Year Study Plan

YEAR 1				
FALL	credits		SPRING	credits
Math 200X	4		Math 201X	4
ES 101	3		ES 201	3
Core 1	3		Core 2	3
Chem 105X	4		Chem 106X	4
English 111	3		Comm 131/141	3
	17		17	= 34
YEAR 2				
FALL	credits		SPRING	credits
Math 202X	4		Math 302	3
ES 209	3		ES 210	3
ME 321	3		ES 346	3
English 211/213	3		Core 3	3
Physics 211X	4		Physics 212X	4
	17		16	= 33
YEAR 3				
FALL	credits		SPRING	credits
ES 307	3		ES 341	4
Core 4	3		Core 5	3
ME 302	3		ME 313	3
ES 301	3		ME 334	3
ES 331	4		ME 308	3
	16		16	= 32
YEAR 4				
FALL	credits		SPRING	credits
ME 441	3		ME 403	3
ME 408	3		ME 415	3
ME 4xx or 6xx	3		ME 487 W,O	3
ME 6xx	3		ME 6xx	3
ESM 450W	3		Core 6	3
	15		15	= 30
YEAR 5				
FALL	credits		SPRING	credits
ME 6xx	3		ME 6xx	3
ME 4xx or 6xx	3		ME 6xx	3
ME 6xx	3		ME 6xx/699	3
ME 698/699	3			
	12		9	= 21
			total	150