Mechanical Engineering

Chair: Kathy Lu, PhD

Degree Offered	Bachelor of Science in Mechanical Engineering
Accreditation	The Bachelor of Science in Mechanical Engineering degree program is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org, under the commission's General Criteria and Program Criteria for Mechanical and Similarly Named Engineering Programs.
Website	https://www.uab.edu/engineering/me/undergraduate
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Mechanical engineering is a broad-based discipline that embraces the two major areas of mechanical systems and thermal systems. With an understanding of the phenomena associated with these topics, mechanical engineers conceive and design a wide variety of devices, machines, and systems to meet the needs and desires of a modern economy. Mechanical engineers also engage in applied research, product development, and project management. Mechanical engineers have a primary role in addressing the problems related to manufacturing, productivity, and safety in the workplace; supply and efficient utilization of energy; transportation; and human rehabilitation.

In addition to Blazer Core, the mechanical engineering curriculum includes a core of fundamental engineering coursework and advanced courses in thermodynamics, fluid mechanics, heat transfer, mechanics of machinery, and mechanical design. The program also includes courses in mathematics, calculus-based physics, and chemistry. Laboratory experiences are provided in each area to illustrate the application of theory in engineering practice. With additional coursework, the mechanical engineering program can also be utilized as a pre-health curriculum.

Please refer to the School of Engineering overview for policies regarding admission; change of major; transfer credit; transient status; dual degree programs; reasonable progress; academic warning, probation, and suspension; reinstatement appeals; and graduation requirements.

Vision

To be a nationally and internationally recognized research-oriented mechanical engineering program – a first choice for undergraduate and graduate education.

Mission

To prepare students to be immediately productive and able to adapt to and lead in a rapidly changing environment and to create and apply knowledge for the benefit of society.

Program Educational Objectives

The Educational Objectives of the Mechanical Engineering undergraduate program are the following:

- Graduates will meet or exceed the expectations of their employers in mechanical engineering or any other career path they choose;
- Graduates will pursue continuing education opportunities in their chosen field through a variety of means, such as professional development training and advanced education;
- Graduates will pursue leadership positions in their selected profession and/or communities.

Student Outcomes

Upon completion of the BSME degree program, our graduates will have:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Bachelor of Science in Mechanical Engineering

Requirements		Hours
Blazer Core Requirements		**43**
CH 115 & 115R & CH 116	General Chemistry I and General Chemistry I Recitation and General Chemistry I Laboratory	
EH 101	English Composition I	
EH 102	English Composition II	
EGR 103	Computer Aided Graphics and Design	
EGR 200	Introduction to Engineering [1]	
MA 125	Calculus I [1]	
PH 221 & 221L & 221R	General Physics I and General Physics Laboratory I and General Physics I Recitation	
PH 222 & 222L & 222R	General Physics II and General Physics Laboratory II and General Physics II - Recitation	
Academic Foundations: Reasoning		
Thinking Broadly: History & Meaning		
Thinking Broadly: Creative Arts		
Thinking Broadly: Humans & Their Societies		

City as a Classroom [S]		
Other Required Courses		**73**
CE 210	Statics	
CE 220	Mechanics of Solids	
CE 221	Mechanics of Solids Laboratory	
CE 395	Engineering Economics	
CH 117 & 117R	General Chemistry II and General Chemistry II Recitation	
EE 312	Electrical Systems	
EGR 150	Computer Methods in Engineering	
EGR 265	Math Tools for Engineering Problem Solving [1]	
MA 126	Calculus II [3]	
ME 215 & 215R	Dynamics and Dynamics Recitation	
ME 241 & 241R	Thermodynamics I and Thermodynamics Recitation	
ME 242	Thermodynamics II	
ME 321	Introduction to Fluid Mechanics	
ME 322	Introduction to Heat Transfer	
ME 360	Introduction to Mechatronic Systems Engineering	
ME 361 & 361L	Thermo-Fluids Systems and Thermo-Fluids Systems Laboratory	
ME 364	Linear Algebra and Numerical Methods	
ME 370	Kinematics and Dynamics of Machinery	
ME 371	Machine Design	
ME 461 & 461L	Mechanical Systems and Mechanical Systems Laboratory	
ME 498	Capstone Design Project I	
ME 499	Capstone Design Project II	
MSE 280	Engineering Materials	
MSE 401	Materials Processing	
Math/Science Elective		**3**
Choose one course from the following:		
BY 101	Topics in Contemporary Biology	
BY 108	Human Population and the Earth's Environment	
BY 123 & 123L	Introductory Biology I and Introductory Biology I Laboratory	
CH 235 & 235R	Organic Chemistry I and Organic Chemistry I Recitation	
ES 101	Physical Geology	
MA 180	Introduction to Statistics	
MA 360	Scientific Programming	
MA 361	Mathematical Modeling	
MA 444	Vector Analysis	
MA 445	Complex Analysis	
MA 453	Fourier Analysis	
PH 223	General Physics III: Thermodynamics & Quantum Physics	
Mechanical Engineering Electives		**9**
Choose one course from each of the categories below:		
Computer Aided Engineering Courses		
ME 421	Introduction to Computational Fluid Dynamics Basics	
ME 456	Building Energy Modeling and Analysis	
ME 464	Introduction to Finite Element Method	
Thermal Fluids Courses		
ME 411	Intermediate Fluid Mechanics	
ME 421	Introduction to Computational Fluid Dynamics Basics	
ME 445	Combustion	
ME 447	Internal Combustion Engines	
ME 454	Heating, Ventilating and Air Conditioning	
ME 455	Thermal-Fluid Systems Design	
ME 456	Building Energy Modeling and Analysis	
Mechanical Systems Courses		
ME 430	Vehicular Dynamics	
ME 431	Introduction to Vehicle Drive Systems Engineering	
ME 432	Introduction to Electric and Hybrid Vehicle Engineering	
ME 464	Introduction to Finite Element Method	
ME 475	Mechanical Vibrations	
ME 477	Systems Engineering	
ME 478	Automated Manufacturing	
ME 480	Instrumentation and Measurements	
Total Hours		**128**

1 EGR 200 preferred; other FYE courses accepted
2 CE 280 preferred; other CAC courses accepted
3 May substitute MA 227 and MA 252 for EGR 265 and the MA/SCI elective

Residency Requirement

In addition to UAB's residency requirement, to earn a bachelor of science in mechanical engineering from UAB, the program requires that students complete the following courses at UAB:

Requirements		Hours
Any two of the following:		6
ME 322	Introduction to Heat Transfer	
ME 360	Introduction to Mechatronic Systems Engineering	
ME 370	Kinematics and Dynamics of Machinery	
ME 371	Machine Design	
ME 498	Capstone Design Project I	3
ME 499	Capstone Design Project II	3
Total Hours		**12**

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Curriculum for the Bachelor of Science in Mechanical Engineering(BSME)

Freshman			
First Term	**Hours**	**Second Term**	**Hours**
CH 115 & 115R & CH 116^	4	EGR 103#	3
EGR 200[1]	3	EGR 150	3
EH 101%	3	EGR 194	1
MA 125 & 125L*	4	MA 126	4
		PH 221 & 221L & 221R^	4
	14		**15**

Sophomore

First Term	Hours	Second Term	Hours
CE 210	3	CE 220	3
CH 117 & 117R	3	CE 221	1
EGR 265[2]	4	EH 102[%]	3
ME 241 & 241R	3	ME 215 & 215R	3
PH 222 & 222L & 222R[^]	4	ME 242	3
		Math/Science Elective[2,4]	3
	17		**16**

Junior

First Term	Hours	Second Term	Hours
ME 321	3	EE 312	3
ME 364	3	ME 322	3
ME 370	3	ME 360	3
MSE 280	3	ME 361 & 361L	3
Blazer Core: Reasoning[3]	3	ME 371	3
		Blazer Core: Creative Arts[3]	3
	15		**18**

Senior

First Term	Hours	Second Term	Hours
ME 461 & 461L	3	CE 395	3
ME 498	3	ME 499	3
MSE 401	3	Mechanical Engineering Elective[5]	3
Mechanical Engineering Elective[5]	3	Mechanical Engineering Elective[5]	3
Blazer Core: City as a Classroom[$]	3	Blazer Core: History & Meaning[3]	3
Blazer Core: Humans & Their Societies[3]	3		
	18		**15**

Total credit hours: 128

1 EGR 200 preferred; other FYE courses accepted

2 May substitute MA 227 and MA 252 for EGR 265 and the Math/Science elective

3 Refer to Blazer Core as specific for engineering majors

4 Students may choose from the following: BY 101, BY 108, BY 123, CH 235, ES 101, MA 180, MA 360, MA 361, MA 444, MA 445, MA 453

5 Students must choose one course from each area:

- Mechanical Systems: ME 430, ME 431, ME 432, ME 464, ME 475, ME 477, ME 478, ME 480
- Thermal Fluids: ME 411, ME 421, ME 445, ME 447, ME 454, ME 455, ME 456
- Computer-Aided Engineering content: ME 421, ME 456, ME 464

^ Satisfies Blazer Core: Scientific Inquiry

% Satisfies Blazer Core: Writing

Satisfies Blazer Core: Communicating in a Modern World

* Satisfies Blazer Core: Quantitative Literacy

$ CE 280 preferred, other City as a Classroom courses accepted

Courses

ME 011. Undergraduate Internship in ME. 0 Hours.
Engineering internship experience in preparation for the student's intended career. Students in a university recognized cooperative education experience should register for COP 011 or COP 012.

ME 102. Engineering Graphics. 2 Hours.
Basic concepts in technical sketching, computer-aided drawing and design, projections, sections, and dimensioning.
Prerequisites: MA 105 [Min Grade: C](Can be taken Concurrently) or MA 106 [Min Grade: C](Can be taken Concurrently) or MA 107 [Min Grade: C](Can be taken Concurrently) or MA 125 [Min Grade: C](Can be taken Concurrently) or MA 225 [Min Grade: C]

ME 103. Drawing, Design and Measurement for Industrial Distribution. 3 Hours.
Technical sketching and reading of engineering drawings and analysis of systems involving human performance. For non-engineering majors. Not available for credit toward engineering major.

ME 215. Dynamics. 3 Hours.
Kinematics of particles in Cartesian, cylindrical, and polar coordinates. Simple relative motion. Second law application in rectilinear translation. Projectile motion. Energy and momentum principles for particles and for rigid bodies in plane motion. Impact and conservation of linear momentum.
Prerequisites: CE 210 [Min Grade: C]

ME 215R. Dynamics Recitation. 0 Hours.
An application-based course designed to reinforce concepts from ME 215.

ME 241. Thermodynamics I. 3 Hours.
Thermodynamic definitions, properties of a pure substance, ideal, and real gases, work, and heat. Fundamental laws of thermodynamics, entropy, reversible cycles, and irreversibility.
Prerequisites: PH 221 [Min Grade: C] and (CH 115 [Min Grade: C] or CH 125 [Min Grade: C]) and MA 126 [Min Grade: C](Can be taken Concurrently) or MA 226 [Min Grade: C](Can be taken Concurrently)

ME 241R. Thermodynamics Recitation. 0 Hours.
An application-based course designed to reinforce concepts from ME 241.

ME 242. Thermodynamics II. 3 Hours.
Application of thermodynamic principles to engineering systems; vapor power cycles; gas turbine cycles; Otto and Diesel cycles; refrigeration cycles; mixtures of ideal gases; psychrometrics.
Prerequisites: ME 241 [Min Grade: D] and EGR 150 [Min Grade: D] and (MA 126 [Min Grade: C] or MA 226 [Min Grade: C])

ME 251. Introduction to Thermal Sciences. 2 Hours.
Introduction to thermodynamics and heat transfer for non-mechanical engineering majors.
Prerequisites: (MA 126 [Min Grade: C] or MA 226 [Min Grade: C]) and PH 221 [Min Grade: C]

ME 302. Overview of Mechanical Components. 3 Hours.
An introduction to statics, dynamics, strength of materials, and engineering design. Transformation of energy, thermodynamics, heat transfer, and fluid mechanics. For non-engineering majors. Not available for credit toward engineering major.

ME 321. Introduction to Fluid Mechanics. 3 Hours.
Fluid properties, fluid statics, fluid in motion (control volume method), pressure variation in flowing fluids (Bernoulli equation), principles of momentum and energy transport, dimensional analysis and similitude, internal flow and external flow.
Prerequisites: ME 241 [Min Grade: D] and (MA 227 [Min Grade: D] and MA 252 [Min Grade: D] or EGR 265 [Min Grade: D]) and CE 210 [Min Grade: D] and EGR 150 [Min Grade: D]

ME 322. Introduction to Heat Transfer. 3 Hours.
Fundamentals of heat transfer and their application to practical problems, including steady and transient heat conduction, external and internal forced convection, natural convection and radiation.
Prerequisites: ME 321 [Min Grade: D]

ME 360. Introduction to Mechatronic Systems Engineering. 3 Hours.
Control systems, feedback, and transfer function concepts. Laplace transform of mechatronic systems. Stability, steady state, and transient response. Systems modeling and analysis in time and frequency domain. Root locus and Nyquist Bode plots. Actuators, sensors, and controllers for various engineering applications. Fundamentals of mechanical and electrical/electronic component integration with controls and mechatronic system design.
Prerequisites: ME 215 [Min Grade: D] and ME 364 [Min Grade: D]

ME 361. Thermo-Fluids Systems. 3 Hours.
Pressure, temperature, fluid flow, and heat transfer instrumentation and their application to measurements of mass, heat, and momentum transport, flow characterization, heat engine and refrigeration cycles, and other thermal-fluids experiments. Experimental uncertainty analysis. Writing proficiency is required. ME 361L must be taken concurrently.
Prerequisites: ME 242 [Min Grade: D](Can be taken Concurrently) and ME 322 [Min Grade: D](Can be taken Concurrently)

ME 361L. Thermo-Fluids Systems Laboratory. 0 Hours.
Lab component for ME 361 Thermo-Fluids Systems. ME 361 must be taken concurrently.

ME 364. Linear Algebra and Numerical Methods. 3 Hours.
Linear equations and matrices, real vector bases, matrix decompositions, linear transformations; determinants, eigenvalues, eigenvectors; numerical methods for linear systems of equations, integration, ordinary differential equations; approximation, interpolation, least squares fits.
Prerequisites: (MA 227 [Min Grade: D] and MA 252 [Min Grade: D] or EGR 265 [Min Grade: D]) and EGR 150 [Min Grade: D]

ME 370. Kinematics and Dynamics of Machinery. 3 Hours.
Displacement, velocity and acceleration analysis, synthesis and design of linkages and mechanisms for various engineering applications on the basis of motion requirements. Static and dynamic force analysis of linkages, balancing of rotors and reciprocating machines. Significant consideration is given to designing geometry of gear sets: spur, helical, worm, and bevel gears. Analysis of planetary gear sets and drivetrains completes the course. Computer workshops support the learning process of main technical components.
Prerequisites: (EGR 103 [Min Grade: D] or ME 102 [Min Grade: D]) and ME 215 [Min Grade: D]

ME 371. Machine Design. 3 Hours.
Body stress, deflection and fatigue strength of machine components. Failure theories, safety factors and reliability, surface damage. Application to the design of gears, shafts, bearings, welded joints, threaded fasteners, belts and chains, keys, pins, springs, as well as mechanical design and selection of other machine components. Software applications, design projects, and exposure to hardware and systems are used to reinforce concepts.
Prerequisites: CE 220 [Min Grade: D] and EGR 150 [Min Grade: D] and ME 215 [Min Grade: D]

ME 411. Intermediate Fluid Mechanics. 3 Hours.
Applications of fluid dynamic principles to engineering flow problems such as turbo-machinery flow and one-dimensional compressible flow. Vorticity, potential flow, viscous flow, Navier-Stokes solutions, and boundary layers.
Prerequisites: ME 321 [Min Grade: D] and ME 364 [Min Grade: D]

ME 421. Introduction to Computational Fluid Dynamics Basics. 3 Hours.
Governing equations for fluid flows, classifications of flow regimes, and approaches to analyze fluid flow problems. Introduction to Computational Fluid Dynamics (CFD), mesh generation, boundary conditions, numerical solution of equations governing fluid flows, and visualization. Hands-on exercises using a commercial CFD solver.
Prerequisites: ME 321 [Min Grade: D]

ME 430. Vehicular Dynamics. 3 Hours.
Introduction to the fundamentals of mechanics and analytical methods for modeling vehicle dynamics and performance. Topics include tire-road interaction modeling, vehicle longitudinal dynamics and traction performance, lateral dynamics, handling, stability of motion and rollover, as well as contribution of the drivetrain system, steering system and suspension configurations to the dynamics of a vehicle. Software applications, projects, and exposure to hardware and systems are used to reinforce concepts.
Prerequisites: ME 215 [Min Grade: D]

ME 431. Introduction to Vehicle Drive Systems Engineering. 3 Hours.
Engineering fundamentals of mechanical and mechatronic, hybrid-electric, and electric drive systems. Applications to passenger cars and commercial vehicles. Drive system and component design, including main clutches and torque converters, transmissions, transfer cases, and drive axles. Introduction to plug-in hybrid-electric vehicles.
Prerequisites: ME 215 [Min Grade: D] and ME 370 [Min Grade: D](Can be taken Concurrently)

ME 432. Introduction to Electric and Hybrid Vehicle Engineering. 3 Hours.
Introduction to fully electric and hybrid vehicle engineering. Mechatronic system and component design. Batteries and energy storage devices. Plug-in hybrid electric vehicles.
Prerequisites: ME 215 [Min Grade: D] and ME 360 [Min Grade: D](Can be taken Concurrently)

ME 445. Combustion. 3 Hours.
Evaluation of the impact of fuel characteristics and operating conditions on the performance of coal-fired electric utility steam-raising plant and the prospects for continued reliance on coal as fuel for electric power generation. The phenomena emphasized are the behavior of turbulent jets; ignition, devolatilization and combustion of coal particles; radiative heat transfer and the effect of ash deposits on heat transfer; formation of air pollutants and their removal from combustion products; integrated gasification combined cycle; and capture and sequestration of carbon dioxide.
Prerequisites: ME 242 [Min Grade: D] and ME 322 [Min Grade: D]

ME 447. Internal Combustion Engines. 3 Hours.
Fundamentals of reciprocating internal combustion engines: engine types, engine components, engine design and operating parameters, thermochemistry of fuel-air mixtures, properties of working fluids, ideal models of engine cycles, engine operating characteristics, gas-exchange processes, fuel metering, charge motion within the cylinder, combustion in spark-ignition and compression ignition engines.
Prerequisites: ME 215 [Min Grade: D] and ME 242 [Min Grade: D]

ME 454. Heating, Ventilating and Air Conditioning. 3 Hours.
Fundamentals and practice associated with heating, ventilating, and air conditioning; study of heat and moisture flow in structures, energy consumption, and design of practical systems.
Prerequisites: ME 242 [Min Grade: D] and ME 322 [Min Grade: D]

ME 455. Thermal-Fluid Systems Design. 3 Hours.
Comprehensive design problems requiring engineering decisions and code/Standard compliance. Emphasis on energy system components: piping networks, pumps, heat exchangers. Includes fluid transients and system modeling.
Prerequisites: ME 242 [Min Grade: D] and ME 322 [Min Grade: D]

ME 456. Building Energy Modeling and Analysis. 3 Hours.
Computer modeling of energy use and thermal comfort in buildings using several software tools. Interpretation and analysis of the results. Implementing energy efficiency measures in the model and studying the effects on energy use.
Prerequisites: ME 242 [Min Grade: D] and ME 322 [Min Grade: D]

ME 461. Mechanical Systems. 3 Hours.
This course concentrates on main technical principles and aspects of mechanical systems design. The course also provides fundamental knowledge on test equipment and experimental techniques for experimenting on main technical principles of mechanical design. This course discusses data acquisition systems and signal conditioning, and design of experiments. Writing proficiency is required. ME 461L must be taken concurrently.
Prerequisites: CE 220 [Min Grade: D] and ME 215 [Min Grade: D]

ME 461L. Mechanical Systems Laboratory. 0 Hours.
Lab Component of ME 461 Mechanical Systems. ME 461 must be taken concurrently.

ME 464. Introduction to Finite Element Method. 3 Hours.
Concepts and applications of finite element method. Development and applications of basic elements used in engineering mechanics. Use of finite element analysis software. Application of finite element concept to several areas of mechanics.
Prerequisites: CE 220 [Min Grade: D] and ME 364 [Min Grade: D]

ME 475. Mechanical Vibrations. 3 Hours.
Development of equations of motion for free and forced single-degree-of-freedom (SDOF) systems. Multi-degree-of-freedom systems. Transient response, support motion and vibration isolation for SDOFs. Vibration absorbers, generalized mass and stiffness, orthogonality of normal modes, and root solving and Gauss elimination procedures. Cholesky decomposition and Jacobi diagonalization methods.
Prerequisites: (MA 227 [Min Grade: D] and MA 252 [Min Grade: D] or EGR 265 [Min Grade: D]) and ME 215 [Min Grade: D]

ME 477. Systems Engineering. 3 Hours.
Exposure to the field of systems engineering, mission design, requirements development, trade studies, project life cycle, system hierarchy, risk analysis, cost analysis, team organization, design fundamentals, work ethics, compare and evaluate engineering alternatives, systems thinking. Registration is restricted to junior or higher standing.

ME 478. Automated Manufacturing. 3 Hours.
Introduction to automated manufacturing technology. Components of automated systems (controllers, sensors and actuators) and automated manufacturing sub-systems (3D printer, CNC, robot and computer vision) will be studied in a lecture\lab environment with hands on activities.
Prerequisites: (EGR 103 [Min Grade: D] or ME 102 [Min Grade: D]) and EGR 150 [Min Grade: D]

ME 480. Instrumentation and Measurements. 3 Hours.
Thorough exploration of fundamental measurement concepts and techniques for data acquisition and validation. Explanation of important selection criteria for the identification and configuration of commercially available data acquisition devices. Students will get hands-on experience following best practices for data acquisition (high speed vs low speed) relevant to their field of study or career. Many types of sensors, their underlying technology, and measurement techniques will be discussed (i.e. accelerometers, load cells, Digital Image Correlation, etc.) to demonstrate best practices for sensor selection for a wide range of specialized applications. Registration is restricted to junior or higher standing.

ME 489. Undergraduate Research in Mechanical Engineering. 1-6 Hour.
Undergraduate research experiences in mechanical engineering.
Prerequisites: (EGR 194 [Min Grade: D] and EGR 111 [Min Grade: D]) or HC 111 [Min Grade: D] and (MA 125 [Min Grade: C] or MA 225 [Min Grade: C]) and PH 221 [Min Grade: C](Can be taken Concurrently)

ME 490. Special Topics in Mechanical Engineering. 1-3 Hour.
Special Topics in Mechanical Engineering.

ME 491. Individual Study in Mechanical Engineering. 1-6 Hour.
Individual Study in Mechanical Engineering.

ME 494. Mechanical Engineering Seminar. 1 Hour.
Required for ME undergraduate Honors Program students. Presentations by students, faculty, and guests regarding current research.

ME 496. Honors Research. 1-6 Hour.
Research opportunities for undergraduate students in the Mechanical Engineering Honors Program.
Prerequisites: EGR 301 [Min Grade: C]

ME 498. Capstone Design Project I. 3 Hours.
Capstone design project: interdisciplinary design teams, ethics, materials selection, design process, development of proposal, project planning and scheduling, project execution and resource scheduling, and communication of design.
Prerequisites: (ME 322 [Min Grade: D] and ME 360 [Min Grade: D]) or (ME 322 [Min Grade: D] and ME 370 [Min Grade: D]) or (ME 322 [Min Grade: D] and ME 371 [Min Grade: D]) or (ME 360 [Min Grade: D] and ME 370 [Min Grade: D]) or (ME 360 [Min Grade: D] and ME 371 [Min Grade: D]) or (ME 370 [Min Grade: D] and ME 371 [Min Grade: D]) and MSE 401 [Min Grade: D](Can be taken Concurrently)

ME 499. Capstone Design Project II. 3 Hours.
Continuation of ME 498. Capstone interim and final design reviews with written and oral reports. ME 498 must be taken the term immediately before ME 499.
Prerequisites: (ME 322 [Min Grade: D] or ME 360 [Min Grade: D] or ME 370 [Min Grade: D] or ME 371 [Min Grade: D]) and (ME 322 [Min Grade: D] or ME 360 [Min Grade: D] or ME 370 [Min Grade: D] or ME 371 [Min Grade: D]) and (ME 322 [Min Grade: D] or ME 360 [Min Grade: D] or ME 370 [Min Grade: D] or ME 371 [Min Grade: D]) and ME 498 [Min Grade: D]