

Curriculum

□ Undergraduate Course

Classification	Subject No.	Subject Name	Lecture:Exp.:Credit (Homework)	Semester	Remark	
Elective Basic Courses	MAE 106	Human and Machine	3:0:3(3)	Fall		
	MAE 208	Experiences in New Mechanical Engineering Fields	2:3:3(3)	Spring		
Mandatory Major Courses	MAE 200	Basic Mechanical Practice	2:3:3(3)	Spring		
	MAE 205	Mechanical Engineering Laboratory	2:3:3(3)	Fall		
	MAE 400	Capstone Design I	1:6:3(6)	Spring		
Elective Major Courses (Basic Courses)	MAE 211	Thermodynamics	3:0:3(6)	Fall		
	MAE 221	Fluid Mechanics	3:0:3(6)	Spring		
	MAE 231	Mechanics of Materials	3:1:3(6)	Spring		
	MAE 251	Dynamics	3:0:3(6)	Fall		
	MAE 307	Applied Electronics	2:3:3(6)	Spring		
	MAE 340	Engineering Design	2:3:3(6)	Fall		
	MAE 360	Modeling and Control of Engineering Systems	3:3:4(6)	Fall		
	MAE 370	Understanding of Materials and Processing	3:0:3(6)	Spring		
Elective Major Courses (Advanced Courses)	MAE 206	Machine System Automation	2:3:3(6)	Fall		
	MAE 301	Numerical Analysis	3:0:3(6)	Spring		
	MAE 302	Creative Problem Solving	2:3:3(6)	Spring		
	MAE 305	Mechanical Engineering Lab. II	2:3:3(6)	Fall		
	MAE 311	Heat Transfer	3:0:3(6)	Spring		
	MAE 312	Energy and Environment	3:0:3(6)	Fall		
	MAE 320	Applied Fluid Mechanics	3:0:3(6)	Spring		
	MAE 330	Foundation of Stress Analysis	3:0:3(6)	Spring		
	MAE 341	Mechanical Component Design	3:0:3(6)	Fall		
	MAE 342	Mechanism Design	3:0:3(6)	Fall		
	MAE 351	Mechanical Vibrations	3:0:3(6)	Spring		
	MAE 361	Introduction to System Dynamics	3:0:3(6)	Spring		
	MAE 371	Advanced Materials Engineering and its Application	3:0:3(6)	Fall		
	MAE 401	Capstone Design II	1:6:3(6)	Fall		
	MAE 403	Application of Computer Graphics	2:3:3(6)	Fall	CS480	
	MAE 411	Design of Thermal Fluid Systems	3:0:3(6)	Fall		
		MAE 413	Engine Technology	3:0:3(6)	Spring	
		MAE 414	Applied superconductivity and Thermal Engineering	3:0:3(6)	Fall	
		MAE 430	Introduction to Reliability in Mechanical Engineering Design	3:0:3(6)	Fall	
		MAE 431	Introduction to Continuum Mechanics	3:0:3(6)	Fall	
		MAE 432	Deformation, Fracture and Strength of Materials	3:0:3(6)	Spring	
		MAE 440	Engineering Design via FEM	3:1:3(6)	Spring	
		MAE 441	CAE Systems and Applications	3:1:3(6)	Fall	
		MAE 452	Noise Control Engineering	3:0:3(6)	Fall	
		MAE 453	Introduction to Robotics Engineering	3:0:3(6)	Fall	
		MAE 460	Automatic Control	3:3:4(6)	Fall	
		MAE 461	Introduction to Fuel Cell Systems	3:0:3(6)	Spring	
		MAE 471	Precision Engineering	3:1:3(6)	Fall	
		MAE 474	CAD / CAM	3:1:3(6)	Fall	
		MAE 481	Introduction to Electromagnetism & Optics	3:1:3(6)	Spring	
		MAE 483	Introduction to Statistical Thermodynamics	3:0:3(6)	Fall	
		MAE 484	Structure & Function of Human Body	3:0:3(6)	Fall	
		MAE 491	Special Topics in Mechanical Engineering	3:0:3(6)	Spring-Fall	
Research	MAE 490	Thesis Study	0:6:3	Spring-Fall		
	MAE 495	Individual Study	0:6:1	Spring-Fall		
	MAE 496	Seminar	1:0:1	Spring-Fall		

* 400 unit courses are mutually recognizable between bachelor's and master's courses.

□ Graduate Course

Classification	Subject No.	Subject Name	Lecture:Lab.:Credit (Homework)	Semester	Remark
Mandatory General Courses	CC 010	Special Lecture on Leadership	1:0:0	Spring-Fall	
	CC 510	Introduction to Computer Application	2:3:3	Spring-Fall	
	CC 511	Probability and Statistics	2:3:3	Spring-Fall	
	CC 512	Introduction to Materials and Engineering	3:0:3	Spring-Fall	
	CC 513	Engineering Economy and Cost Analysis	3:0:3	Fall	
	CC 522	Introduction to Instruments	2:3:3	Fall	
	CC 530	Entrepreneurship and Business Strategies	3:0:3	Spring	
Elective Major Courses	MAE 500	Mathematical Methods in Mechanical Engineering	3:0:3(6)	Spring	
	MAE 502	Introduction to Finite Element Method	3:0:3(6)	Spring	
	MAE 505	Measurement Instrumentation	3:1:3(6)	Fall	
	MAE 510	Advanced Fluid Mechanics	3:0:3(6)	Spring	
	MAE 511	Advanced Thermodynamics	3:0:3(6)	Spring	
	MAE 512	Advanced Heat Transfer	3:0:3(6)	Fall	
	MAE 513	Advanced Combustion	3:0:3(6)	Fall	
	MAE 514	Multiphase Flow I	3:0:3(6)	Fall	
	MAE 515	Cryogenic Engineering	3:0:3(6)	Spring	
	MAE 521	Viscous Fluid Flow	3:0:3(6)	Fall	
	MAE 525	Turbomachinery	3:0:3(6)	Fall	
	MAE 530	Advanced Mechanics of Solids	3:0:3(6)	Spring	
	MAE 531	Numerical Stress Analysis	3:1:3(6)	Fall	
	MAE 533	Fracture Mechanics	3:0:3(6)	Fall	
	MAE 534	Fatigue Fracture and Strength	3:0:3(6)	Spring	
	MAE 535	Experimental Stress Analysis	2:3:3(6)	Spring	
	MAE 536	Mechanics of Plastic Deformation	3:0:3(6)	Fall	
	MAE 537	Optional design of Composite Structures	3:0:3(6)	Spring	
	MAE 543	Optimal Design	3:1:3(6)	Fall	
	MAE 545	Theory of Hydrodynamic Lubrication	3:0:3(6)	Spring	
	MAE 546	Vehicle Dynamics	3:0:3(6)	Spring	
	MAE 547	Knowledge - Based Design System	3:1:3(6)	Fall	
	MAE 548	Feature Based Modeling	3:1:3(6)	Fall	
	MAE 549	Reliability in Microsystems Packaging	3:1:3(6)	Fall	
	MAE 550	Advanced Dynamics	3:0:3(6)	Fall	
	MAE 551	Linear Vibration	3:0:3(6)	Spring	
	MAE 552	Introduction to Acoustics	3:0:3(6)	Spring	
	MAE 553	Robot Dynamics	3:0:3(6)	Spring-Fall	
	MAE 554	Future energy-utilization engineering	3:0:3(6)	Spring-Fall	
	MAE 561	Linear System Control	3:0:3(6)	Spring	
	MAE 562	Digital System Control	3:0:3(6)	Spring	
	MAE 563	Microprocessor Application	2:3:3(6)	Fall	
	MAE 564	Artificial Neural Network : Theory and Applications	3:0:3(6)	Spring	
	MAE 570	Advanced Manufacturing Systems	3:0:3(6)	Spring	
MAE 571	NC Machining & CAM	3:1:3(6)	Spring-Fall		
MAE 574	Joining Engineering	3:1:3(6)	Fall		
MAE 582	Introduction to Microfabrication Technology	3:0:3(6)	Spring		
MAE 583	MEMS Design and Experimental Microfabrication	2:3:3(6)	Fall		
MAE 585	Mechanics and Control of Human Movement	3:0:3(6)	Spring		
MAE 586	Biomechanical modeling and Simulation of tissue behavior	3:0:3(6)	Fall		

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Elective Major Courses	MAE 587	Optomechatronics	3:0:3(6)	Fall	
	MAE 588	Fuel Cell System Design and Numerical Analysis	3:0:3(6)	Fall	
	MAE 591	Random Data : Analysis and Processing	3:1:3(6)	Fall	
	MAE 592	Laser : Principles and Applications	3:0:3(6)	Fall	
	MAE 603	Advanced Mathematical Methods in Mechanical Engineering I	3:0:3(6)	Fall	
	MAE 604	Metrology	2:3:3(6)	Spring	
	MAE 605	Boundary Element Method	3:1:3(6)	Fall	
	MAE 606	Creative Knowledge Creation Process and Application	3:0:3(6)	Fall	
	MAE 607	Computational Linear Algebra	3:1:3(6)	Spring	
	MAE 611	Convective Heat Transfer	3:0:3(6)	Spring	
	MAE 612	Transport Phenomena	3:0:3(6)	Spring	
	MAE 613	Computational Fluid Mechanics and Heat Transfer	3:0:3(6)	Fall	
	MAE 616	Automobile Technology and Environment	3:0:3(6)	Fall	
	MAE 621	Turbulence	3:0:3(6)	Fall	
	MAE 623	Rotating Flow	3:0:3(6)	Fall	
	MAE 631	Analytical Solid Mechanics	3:0:3(6)	Fall	
	MAE 632	Theory of Viscoelasticity	3:0:3(6)	Fall	
	MAE 633	Mechanical Behavior of Polymeric and Composite Materials	3:0:3(6)	Fall	*ChE 653
	MAE 634	Intelligent Structures and Components	3:0:3(6)	Fall	
	MAE 635	Plastic Analysis and Design of Structures	3:0:3(6)	Fall	
	MAE 638	Axiomatic Design of Composite Structures	3:0:3(6)	Spring	bi-annual
	MAE 641	Computational Machine Dynamics	3:1:3(6)	Spring	
	MAE 642	Medical Biomechanics	3:0:3(6)	Fall	
	MAE 643	Theory of Mechanisms	3:0:3(6)	Fall	
	MAE 644	Tribology	3:0:3(6)	Spring	
	MAE 647	STEP for Electronic Commerce	3:1:3(6)	Spring	odd-year
	MAE 651	Rotor Dynamics	3:0:3(6)	Spring	
	MAE 652	Computational Vibration Analysis	3:0:3(6)	Fall	
	MAE 653	Mechanical Signatures and System Analysis	3:1:3(6)	Fall	
	MAE 654	Noise Control	3:0:3(6)	Fall	
	MAE 655	Robotics Engineering	3:1:3(6)	Fall	
	MAE 661	Optimal Control	3:0:3(6)	Spring	
	MAE 662	Design of Precision Actuation System	3:0:3(6)	Spring	
	MAE 683	Human Robot Interaction: Haptics	3:0:3(6)	Fall	
	MAE 692	Wave Propagation	3:0:3(6)	Spring	
	MAE 694	Discrete Event Systems and Applications	3:0:3(6)	Fall	
	MAE 711	Radiation Heat Transfer	3:0:3(6)	Spring	
	MAE 712	Experimental methods in High Temperature Thermal Engineering	2:3:3(6)	Fall	
	MAE 714	Multiphase Flow II	3:0:3(6)	Spring	
	MAE 722	Computational Turbulence Modeling	3:0:3(6)	Spring	
	MAE 723	Theory of Hydrodynamic Stability	3:0:3(6)	Spring	
MAE 724	Stratified Flow	3:0:3(6)	Fall		
MAE 731	Nonlinear Computational Mechanics of Solid	3:0:3(6)	Spring		
MAE 732	Reliability in Strength Design	3:0:3(6)	Fall		
MAE 734	Analytical Fracture Mechanics	3:0:3(6)	Spring		
MAE 738	Design of Light Sandwich Structures	3:0:3(6)	Spring		
MAE 741	Advanced Optimal Design	3:0:3(6)	Fall		

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Elective Major Courses	MAE 752	Structure-borne Sound	3:0:3(6)	Fall	
	MAE 761	Nonlinear System Control	3:0:3(6)	Spring	
	MAE 762	Adaptive Control System	3:0:3(6)	Spring	
	MAE 771	Analysis and Design of Metal Forming Processes	3:1:3(6)	Fall	
	MAE 800	Special Topics in Mechanical Engineering	3:0:3(6)	Spring-Fall	
	MAE 810	Special Topics in Thermal & Fluid Engineering	3:0:3(6)	Fall	
	MAE 830	Special Topics in Design Engineering	3:0:3(6)	Fall	
	MAE 850	Special Topics in Dynamics and Control	3:0:3(6)	Spring-Fall	
	MAE 870	Special Topics in Production Engineering	3:0:3(6)	Spring-Fall	
Research	MAE 960	M.S. Thesis		Spring-Fall	
	MAE 980	Ph.D. Thesis		Spring-Fall	
	MAE 966	Seminar (M.S)	1:0:1	Spring-Fall	
	MAE 986	Seminar (Ph.D)	1:0:1	Spring-Fall	

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