MICHIGAN TECH - Mechanical Engineering - Technical Electives
2018-2019 Academic Year (Planned)

Semesters/years offered subject to change. Refer to the schedule of classes in BanWeb for current offerings, pre-requisites, restrictions, and course descriptions.

By Course Number

Course Number	Credits	Title	Summer 2018	Fall 2018	Spring 2019	Aerospace Engineering Minor	Manufacturing Minor
BE4115	3	Finite Element Modeling			X		
BE4250	3	Biomedical Optics			X		
BE4335	3	Smart Polymers		X			
BE4510	3	Cardiovascular Engineering		X			
BE4755	3	Medical Devices		X			
CEE4010	3	Introduction to Consulting Engineering	----------NOT OFFERED----------				
CEE4223	3	Steel Design I		X			
CEE4333	3	Estimating and Planning of Construction Projects		X			
CEE4404	3	Railroad Engineering		X			
CEE4406	3	Airport Planning and Design	----------NOT OFFERED----------				
CM4631	2	Polymer Science Laboratory		X			
CM4650	3	Polymer Rheology			X		
CM4655	1	Polymer Rheology Laboratory		X			
CM4740	4	Hydrometallurgy/Pyrometallurgy			X		
CM4770	3	Analytical Microdevice Technologies	----------NOT OFFERED----------				
EE4219	3	Introduction to Electric Machinery and Drives			X		
EE4220	1	Introduction to Electric Machinery and Drives Laboratory			X		
EE4221	3	Power System Analysis 1		X			
EE4222	3	Power System Analysis 2			X		
EE4227	3	Power Electronics		X			
EE4240	4	Introduction to MEMS		X			PROCESS
EE4252	4	Digital Signal Processing and its Applications		X			
EE4262	3	Digital and Non-linear Control			X		
EE4373	4	Advanced Programmable Controllers			X		
EE4777	3	Open-Source 3-D Printing		X			PROCESS
ENG4300	3	Engineering Project Management	Track A (online)				
GE4250	3	Fundamentals of Remote Sensing			X		
GE4610	3	Formation Evaluation and Petroleum Engineering		X			
MEEM4150	3	Intermediate Mechanics of Materials			X	REM. ELEC.	
MEEM4170	3	Failure of Materials in Mechanics			X	REM. ELEC.	
MEEM4180	3	Engineering Biomechanics			X	REM. ELEC.	
MEEM4200	3	Principles of Energy Conversion & Storage			X		
MEEM4201	3	Intermediate Thermodynamics	Track A	X	X	REM. ELEC. (PETITION)	
MEEM4202	4	Int Fluids and Heat Transfer		X		REM. ELEC.	
MEEM4210	3	Computational Fluids Engineering		X		ELECTIVE	
MEEM4220	3	Internal Combustion Engines I		X			
MEEM4230	3	Compressible Flow/Gas Dynamics			X	ELECTIVE	
MEEM4235	3	Wind Energy		X			
MEEM4240	3	Combustion & Air Pollution		X			
MEEM4250	3	Heating/Ventilation/Air Conditioning	----------NOT OFFERED----------				
MEEM4260	3	Fuel Cell Technology		X			
MEEM4295	3	Introduction to Propulsion Systems for Hybrid Electric Vehicles		X			
MEEM4296	3	Introduction to Propulsion Systems for Hybrid Electric Vehicles Lab		X			
MEEM4404	4	Mechanism Synthesis/Dynamic Modeling			X		
MEEM4405	3	Intro to Finite Element Method	Track B	X	X		
MEEM4430	4	Advanced CAD and CAM Methods	Track A	X	X		SYSTEM (PETITION)
MEEM4450	3	Vehicle Dynamics	Track A		X		
MEEM4610	3	Advanced Machining Processes	----------NOT OFFERED----------				PROCESS
MEEM4615	4	Metal Forming Processes	----------NOT OFFERED----------				
MEEM4625	3	Precision Manufacturing and Metrology	----------NOT OFFERED----------				PROCESS
MEEM4630	3	Human Factors	----------NOT OFFERED----------			REM. ELEC.	SYSTEM
MEEM4635	3	Design with Plastics	----------NOT OFFERED----------				PROCESS
MEEM4640	3	Micromanufacturing Processes			X		PROCESS
MEEM4650	3	Quality Engineering		X		REM. ELEC.	SYSTEM
MEEM4655	3	Production Planning			X		SYSTEM
MEEM4675	3	Material Handling-Plant Layout	----------NOT OFFERED----------				SYSTEM
MEEM4685	3	Environmentally Responsible Design & Manufacturing	----------NOT OFFERED----------				
MEEM4695	3	Additive Manufacturing			X		
MEEM4701	4	Analytical and Experimental Modal Analysis		X		REM. ELEC.	
MEEM4702	3	Shock and Vibration			X		
MEEM4704	3	Acoustics and Noise Control			X	REM. ELEC.	
MEEM4705	4	Introduction to Robotics and Mechatronics			X	REM. ELEC.	SYSTEM
MEEM4707	3	Autonomous Systems			X	REM. ELEC.	SYSTEM (PETITION)
MEEM4720	3	Space Mechanics		X		ELECTIVE	

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MEEM4730	3	Dynamic System Simulation			X		
MEEM4750	3	Distributed Embedded Control Systems	NOT OFFERED (SEE MEEM5750)				
MEEM4775	4	Control System Analysis and Design		X			
MEEM4810	3	Introduction to Aerospace Engineering		X		REQUIRED	
MEEM4820	3	Aerospace Propulsion			X	ELECTIVE	
MEEM4850	3	Naval Systems and Platforms		X			
MEEM5110	3	Continuum Mechanics/Elasticity		X			
MEEM5130	3	Nanoscale Science and Technology			X		
MEEM5150	3	Advanced Mechanics of Materials		X			
MEEM5160	3	Experimental Stress Analysis		X			
MEEM5170	3	Finite Element and Variational Methods in Engineering		X			
MEEM5180	3	Mechanics of Composite Materials	----------NOT OFFERED----------				
MEEM5201	1	Fundamentals of SI Engines	5/16 - 5/18/18				
MEEM5202	1	Fundamentals of Diesel Engines	----------NOT OFFERED----------				
MEEM5203	1	SI Engine Control Systems	6/6 - 6/8/18				
MEEM5204	1	Diesel Engine Control Systems	----------NOT OFFERED----------				
MEEM5210	3	Advanced Fluid Mechanics		X			
MEEM5211	3	Advanced Thermodynamics		X			
MEEM5225	3	Advanced Power System and Pollution Control	----------NOT OFFERED----------				
MEEM5230	3	Advanced Heat Transfer			X		
MEEM5240	3	Computational Fluid Dynamics			X		
MEEM5250	3	Internal Combustion Engines II			X		
MEEM5255	3	Advanced Powertrain Instrumentation and Experimental Methods			X		
MEEM5265	3	Physical Gasdynamics		X			
MEEM5270	3	Advanced Combustion			X		
MEEM5275	3	Energy Storage Systems			X		
MEEM5280	3	Phase Change and Two-Phase Flows			X		
MEEM5295	3	Advanced Propulsion Systems for Hybrid Electric Vehicles			X		
MEEM5296	2	Advanced Propulsion Systems for Hybrid Electric Vehicles Laboratory			X		
MEEM5300	3	Cybersecurity of Industrial Control Systems		X			
MEEM5401	3	Design for Reliability		X			PROCESS
MEEM5430	3	Human Factors - Transportation			X		
MEEM5440	3	Advanced Vehicle Dynamics	----------NOT OFFERED----------				
MEEM5645	3	Numerical Analysis of Manufacturing Processes	----------NOT OFFERED----------				
MEEM5655	3	Introduction to Lean Manufacturing			X		SYSTEM
MEEM5665	3	Micro & Nano Fabrication for Energy	----------NOT OFFERED----------				
MEEM5670	3	Experimental Design in Engineering		X			PROCESS
MEEM5680	3	Optimization I			X		SYSTEM
MEEM5685	3	Environmentally Responsible Design & Manufacturing	----------NOT OFFERED----------				
MEEM5700	4	Dynamic Measurement/Signal Analysis		X			
MEEM5701	3	Intermediate Dynamics		X			
MEEM5702	3	Analytical Vibroacoustics		X			
MEEM5703	4	Experimental Methods Vibro-Acoustics	----------NOT OFFERED----------				
MEEM5715	3	Linear Systems Theory and Design		X			
MEEM5750	3	Distributed Embedded Control Systems			X		
MEEM5800	3	Advanced Engineering Mathematics with Applications	FULL SEM (online)				
MEEM5811	3	Automotive Systems		X			
MEEM5812	3	Automotive Control Systems			X		
MEEM5990 - Sec. 50	1	Automotive Transmission System	8/8 - 8/10/18				
MSE4100	3	Mechanical Behavior of Materials		X			
MSE4110	3	Introduction to Polymer Engineering		X			
MSE4120	3	Material & Processing Selection			X	REM. ELEC.	PROCESS
MSE4310	3	Principles of Metal Casting		X			PROCESS
MSE4320	3	Corrosion and Environmental Effects		X			
MSE4330	3	Advanced Physical Metallurgy			X		
MSE4410	3	Science of Ceramic Materials			X		
MSE4430	3	Composite Materials			X	ELECTIVE	
MSE4740	4	Hydrometallurgy/Pyrometallurgy			X		
MSE4777	3	Open-Source 3-D Printing		X			PROCESS
MSE5440	3	Materials Recycling: Processing and Utilization			X		