

TO: The Faculty of the College of Engineering

FROM: The Faculty of the School of Mechanical Engineering

RE: ME 30000, 40000, and 50000 Level Changes in Prerequisites

The Faculty of the School of Mechanical Engineering are seeking to standardize the foundational requirements for undergraduates to take ME 30000, 40000, and 50000 level elective courses. Specifically we want to establish the standard minimum restriction as “junior status” for virtually all of these courses. Also, for those courses that require an undergraduate prerequisite, the faculty have chosen to require a minimum grade of B for these prerequisites. Finally, in a few cases, faculty have chosen to alter the specific prerequisites required to take their course in order to maximize availability and student success. All of these changes are captured in the excel spreadsheet attached showing both the current prerequisites and restrictions and the proposed prerequisites and restrictions. Those courses for which specific changes are required are highlighted in yellow. This action is now being submitted to the Engineering Faculty with a recommendation for approval.

Reason: ME has recently approved a curricular change that will redefine the current “Restricted Electives”, which now include only ME 30000, ME 45200 and ME 47500, to now become “ME Electives”, which can include any 300, 400, or 500 level elective ME courses. Also, the number of ME Elective credits will be increased from 6 credits to 9 credits while simultaneously reducing the number of Technical Electives from 12 credits to 9 credits. In preparation for this change, we are seeking to standardize the minimum requirements for taking these elective courses to minimize confusion and maximize availability and student success.

 2/23/18
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School of Mechanical Engineering

Proposed Prerequisite/Restriction Changes for 300, 400, and 500 Level Courses

(GS = Graduate Standing ; * = minimum grade of B)

Course Number and Title	Current Prereqs		Proposed Prerequisites	
	Prerequisites	Restrictions	Prerequisites	Restrictions
ME 36300 - Principles and Practices of Manufacturing Processes	ME 263			Jr Standing
ME 41300 - Noise Control				Jr Standing
ME 41500 - Energy Systems Engineering	ME 300 and ME 315		ME 300(Prereq) & ME 315(Co-req)	Jr Standing
ME 41800 - Engineering of Environmental Systems and Equipment	ME 300 or ME 301		ME 300(Prereq) & ME 315(Co-req)	Jr Standing
ME 43000 Power Engineering			ME 309(Co-req) or ME 200 (prereq) & AAE 333 (co-req)	Jr Standing
ME 43300 - Principles of Turbomachinery				Jr Standing
ME 43400 - Gas Turbines for Power and Propulsion	ME 300 and ME 309		ME 300 and ME 309	Jr Standing
ME 44000 - Automotive Prime Movers: Green Engines and Clean Engines	ME 300		ME 300	Jr Standing
ME 44400 - Computer-Aided Design and Prototyping		ME Sr Standing		ME Jr Standing
ME 45500 - Vehicle Design and Fabrication	Involved in SAE		Consent of Instructor	Sr Standing
ME 47300 - Engineering Design Using Modern Materials		Sr Standing		Jr Standing
ME 48900 - Introduction to Finite Element Analysis	ME 323		ME 323	Jr Standing
ME 49200 - Technology and Values		Jr Standing		Jr Standing
ME 49601 - Experimental Courses				Jr Standing
ME 497 - Mechanical Engineering Projects		Jr Standing		Jr Standing
ME 50000 - Advanced Thermodynamics	GS or ME 300 or ME 301	Jr Standing	GS or ME 300* or ME 301*	Jr Standing
ME 50100 - Statistical Thermodynamics	GS or ME 300 or ME 301	Jr Standing	GS or ME 300* or ME 301*	Jr Standing
ME 50300 - Micro-And-Nano-Scale Energy Transfer Processes		GS	GS or ME 315* (Co-requisite)	Jr Standing
ME 50500 - Intermediate Heat Transfer	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 50600 - Two-Phase Flow And Heat Transfer	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 50700 - Laser Processing	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 50800 - Heat Trans In Biological Systems		Jr Standing	GS or ME 315*	Jr Standing
ME 50900 - Intermediate Fluid Mechanics		Jr Standing	GS or ME 309*	Jr Standing
ME 51000 - Gas Dynamics		Jr Standing		Jr Standing
ME 51100 - Heat Transfer In Electronic Systems	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 51300 - Engineering Acoustics		Sr Standing		Jr Standing
ME 51400 - Fundamentals Of Wind Energy	GS or ME 200 & ME 309		GS or ME 309*	Jr Standing
ME 51700 - Micro/Nanoscale Physical Processes	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 51800 - Analysis Of Thermal Systems	GS or ME 300 & ME 315	Jr Standing	GS or ME 300* & ME 315*	Jr Standing
ME 52200 - Indoor Environmental Analysis And Design	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 52500 - Combustion		Jr Standing	ME 300*	Jr Standing
ME 52600 - Spray Applications And Theory	GS or ME 315	Jr Standing	GS or ME 315*	Jr Standing
ME 52900 - Sustainable Energy Options And Analysis	GS or ME 300 & ME 315	Jr Standing	GS or ME 300* & ME 315*	Jr Standing
ME 53300 - Turbomachinery II	GS or ME/AEE 538 or ME 433	Jr Standing	GS or ME/AEE 538 or ME 433*	Jr Standing

Proposed Prerequisite/Restriction Changes for 300, 400, and 500 Level Courses

(GS = Graduate Standing; * = minimum grade of B)

ME 53800 - Air Breathing Propulsion	GS or AAE 372 or ME 438	Jr Standing	GS or AAE 372* or ME 438*	Jr Standing
ME 54000 - Internal Combustion Engines	GS or ME 300 & 315 & 440	Sr Standing	GS or ME 300* & 315* & 440*	Jr Standing
ME 54900 - Practical Experience In Vibrations	GS or ME 375	Jr Standing	GS or ME 375*	Jr Standing
ME 55300 - Product And Process Design		Sr Standing	Consent of Instructor	Jr Standing
ME 55400 - Intellectual Property For Engineers	GS or PHYS 172	Jr Standing	GS or PHYS 172*	Jr Standing
ME 55600 - Lubrication, Friction & Wear		Sr Standing		Jr Standing
ME 55700 - Design For Manufacturability		Sr Standing		Jr Standing
ME 55900 - Micromechanics Of Materials		Sr Standing	GS or ME 323*	Jr Standing
ME 56000 - Kinematics	GS or ME 352	Jr Standing	GS or ME 352*	Jr Standing
ME 56100 - Optimal Design: Theory With Practice	GS or ME 352	Jr Standing	GS or ME 352*	Jr Standing
ME 56200 - Advanced Dynamics	GS or ME 352	Jr Standing	GS or ME 352*	Jr Standing
ME 56300 - Mechanical Vibrations	GS or ME 365	Jr Standing	GS or ME 365*	Jr Standing
ME 56400 - Vibrations Of Discretized Systems	ME 563	Jr Standing	ME 563	Jr Standing
ME 56500 - Vehicle Dynamics	GS or ME 352 and ME 375	Jr Standing	GS or ME 352* and ME 375*	Jr Standing
ME 56700 - Dynamical Problems In Design		Sr Standing		Jr Standing
ME 56900 - Mechanical Behavior Of Materials	GS or MSE 230	Jr Standing	GS or MSE 230*	Jr Standing
ME 57000 - Machine Design	GS or ME 352 & ME 452	Jr Standing	GS or ME 352* & ME 452*	Jr Standing
ME 57100 - Reliability Based Design	GS or ME 352	Jr Standing	GS or ME 352*	Jr Standing
ME 57200 - Analysis And Design Of Robotic Manipulators	GS or ME 352	Jr Standing	GS or ME 352*	Jr Standing
ME 57300 - Interactive Computer Graphics		Jr Standing		Jr Standing
ME 57500 - Theory And Design Of Control Systems	GS or ME 475	Jr Standing	GS or ME 475*	Jr Standing
ME 57600 - Computer Control Of Manufacturing Processes	GS or ME 475	Jr Standing	GS or ME 375*	Jr Standing
ME 57700 - Human Motion Kinetics	GS or ME 352	Jr Standing	GS or ME 352*	Jr Standing
ME 57800 - Digital Control	GS or ME 475	Jr Standing	GS or ME 475*	Jr Standing
ME 57900 - Fourier Methods In Digital Signal Processing	GS or ME 475	Jr Standing	GS or ME 375*	Jr Standing
ME 58000 - Nonlinear Engineering Systems	ME 563	Jr Standing	ME 563	Jr Standing
ME 58100 - Numerical Methods In Mechanical Engineering	GS or ME 315 and ME 352	Jr Standing	GS or ME 315*	Jr Standing
ME 58400 - System Identification		Jr Standing		Jr Standing
ME 58500 - Instrumentation For Engineering Measurements		Jr Standing		Jr Standing
ME 58600 - Microprocessors In Electromechanical Systems		Jr Standing	GS or ME 375*	Jr Standing
ME 58700 - Engineering Optics		Sr Standing		Jr Standing
ME 58800 - Mechatronics - Integrated Design Of Electro-Mechanical Systems		Sr Standing	GS or ME 375*	Jr Standing
ME 59200 - Fundamentals Of Particle Image Velocimetry	GS or ME 309	Jr Standing	GS or ME 309*	Jr Standing
ME 59500 - Special-Topic Minicourses		Jr Standing		Jr Standing
ME 59700 - Advanced Mechanical Engineering Projects I		Jr Standing		Jr Standing