MECHANICAL ENGINEERING, POST-BACCALAUREATE CERTIFICATE (P.B.C.)

12 credits required

All Graduate Certificate in Engineering Programs consist of 4 courses/12 credits. All students are expected to complete a preliminary course plan for their intended degree program. Degree planning worksheets can be found here: https://mage.umd.edu/degree-planning-sheets (https://mage.umd.edu/degree-planning-sheets/)

Course	Title	Credits
Select 4 courses in either the Energy & Environment or General Mechanical track:		12
Energy and The Environment:		
ENME647	Multiphase Flow and Heat Transfer	
ENPM621	Heat Pump and Refrigeration Systems Design Analysis	
ENPM622	Energy Conversion I - Stationary Power	
ENPM623	Engineering Combustion Emissions for Air Pollution Control	
ENPM625	Heating, Ventilation and Air Conditioning of Buildings	
ENPM626	Environmental Energy Security	
ENPM627	Environmental Risk Analysis	
ENPM651	Heat Transfer for Modern Application	
ENPM654	Energy Systems Management	
ENPM656	Energy Conversion II – Mobile Power	
ENPM635	Thermal Systems Design Analysis	
OR		
ENME635	Energy Systems Analysis for Sustainability and Decarbonization	
ENPM624	Renewable Energy Applications	
OR		
ENME701	Sustainable Energy Conversion and the Environment	
General Mechanical Engineering:		
ENME600	Engineering Design Methods	
ENME605	Advanced Systems Control	
ENME607	Engineering Decision Making and Risk Management	
ENME610	Engineering Optimization	
ENME631	Advanced Conduction and Radiation Heat Transfer	
ENME632	Advanced Convection Heat Transfer	
ENME640	Fundamentals of Fluid Mechanics	
ENME662	Linear Vibrations	
ENME690	Mechanical Fundamentals of Electronic Systems	
ENME712	Measurement, Instrumentation and Data Analysis for Thermo-Fluid Processes	
ENPM671	Advanced Mechanics of Materials	
ENPM654	Energy Systems Management	
ENPM652	Applied Finite Element Methods	
OR		
ENME674	Finite Element Methods	
Total Credits		**12**