



Polytechnic University of Puerto Rico  
Graduate School  
Master Program in Mechanical Engineering



**M.E.Mech.Eng.  
Mechanical Engineering**

Core Courses: 12 credit-hours  
Specialization Courses: 12 credit-hours  
Electives Courses: 6 credit-hours  
Design Project Course: 3 credit-hours  
Total: 33 credit-hours

**Core Courses**  
12 credit-hours

ME 6000 – Advanced Numerical Analysis  
ME 6012 – Advanced Engineering Mathematics  
ME 6100 – Advanced Engineering Thermodynamics  
ME 6200 – Advanced Solid and Fracture Mechanics

**Specialization Courses**  
**Aerospace**

Must select 12 credit-hours

ME 6130 – Gas Dynamics  
ME 6140 – High Speed Aerodynamics  
ME 6150 – Theory of Turbomachines  
ME 6160 – Computational Fluid Dynamics  
ME 6220 – Fracture Mechanics  
ME 6260 – Introduction to Composite Materials  
ME 6270 – Fundamentals of Tribology and Surface Layer Technology  
ME 6330 – Finite Element Methods  
ME 6340 – Stability and Vibrations of Systems  
ME 6350 – Mechanical and Aerospace Control Systems  
ME 6360 – Optimization in Engineering Design

**Electives Courses\***  
6 credit-hours

ME 6110 – Conduction and Radiation Heat Transfer  
ME 6120 – Advanced Convection, Heat Transfer, and  
Fluid Mechanics  
ME 6170 – Alternative and Renewable Energy Technologies

ME 6210 – Theory of Elasticity  
ME 6240 – Tool, Tooling, and Machine Design  
ME 6250 – Advanced Manufacturing Simulation

\* In addition to the current list of electives courses, the student could select as an elective any course with ME code.

**Design Project**  
(3 credits)

ME 6400 – Design Project (Approval Required)  
ME 6401 – Design Project Extension (Approval Required)