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

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

- **Core Course**: 3 credit-hours  
- **General Courses**: 27 credit-hours  
- **Design Project Course**: 3 credit-hours  
- **Total**: 33 credit-hours

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**Core Course**  
3 credit-hours

- ME 6014 – Advanced Engineering Mathematics

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**General Courses**  
Must select 27 credit-hours

- ME 6100 – Advanced Engineering Thermodynamics  
- ME 6110 – Conduction and Radiation Heat Transfer  
- ME 6120 – Advanced Convection Heat Transfer and Fluid Mechanics  
- ME 6130 – Gas Dynamics*  
- ME 6140 – High Speed Aerodynamics*  
- ME 6150 – Theory of Turbomachines  
- ME 6160 – Computational Fluid Dynamics  
- ME 6170 – Alternative and Renewable Energy Technologies  
- ME 6200 – Advanced Solid Mechanics  
- ME 6220 – Fracture Mechanics  
- ME 6240 – Tools, Tooling, and Machine Tool Design  
- ME 6250 – Advanced Manufacturing Simulation  
- ME 6260 – Introduction to Composite Materials  
- ME 6270 – Fundamentals of Tribology and Surface Layer Technology  
- ME 6300 – Advanced Aerospace Structures*  
- ME 6330 – Finite Element Analysis  
- ME 6340 – Vibration Systems  
- ME 6350 – Mechanical and Aerospace Control Systems*  
- ME 6360 – Optimization in Engineering Design  
- ME 6390 – Special Topics in Mechanical Engineering

* Students who take these courses will obtain a **Specialization** in the **Aerospace Area**.

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**Design Project**  
(3 credits)

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