



# MASTER'S PROGRAM IN MECHANICAL ENGINEERING

## Practical Knowledge to Advance Your Career

Mercer University's Master of Science in Engineering (MSE) in Mechanical Engineering program provides students with a *broad-based curriculum* focused on mechanics, thermal sciences and materials. The breadth and depth of the program's advanced mechanical engineering topics ensure students graduate with *high marketability* while the small class sizes ensure students benefit from *ideal student-faculty relationships*.

The program's evening class structure accommodates the schedules of practicing professionals in Central Georgia, making Mercer the perfect fit for students wishing to pursue a graduate degree part-time.

## AN ADVANCED DEGREE FOR THE PRACTICING PROFESSIONAL

- Attend evening courses taught once a week
- Learn from industry-experienced faculty in face-to-face class settings
- Benefit from small class sizes and a high level of interaction between students and faculty
- Collaborate with a diverse group of professionals, each bringing unique backgrounds and work experiences to the classroom



### ALUMNI PERSPECTIVE

*"My Mercer University Master's degree in Mechanical Engineering gave me the skills and confidence I needed to advance my career. Being able to take evening classes after work allowed me to have time for my family and full-time job while earning my degree."*

**RAY WALDBUSSER**

Lead C-130 Aerospace Engineer  
Naval Air Depot, Cherry Point, N.C.

## CUSTOMIZE YOUR DEGREE

Choose from two degree pathways.

1. Delve into advanced mechanical engineering (MAE) topics with Mercer's all-coursework option (30 credits coursework)
2. Contribute to the mechanical engineering field through graduate research via a faculty-directed thesis (24 credits coursework and 6 credits thesis)

Take courses from a range of advanced MAE topics. Courses recently offered include:

- Mechanical Engineering Applications of Partial Differential Equations
- Machine Dynamics
- Fluid Mechanics
- Heat Transfer
- Laminated Composite Materials
- Fatigue and Fracture
- Aircraft Structural Analysis
- Engineering Analysis
- Numerical Methods
- Advanced Solid Mechanics

## GAIN HANDS-ON PROJECT EXPERIENCE IN TWO CUTTING-EDGE MAE LABORATORIES

- Composite Materials Lab
- Corrosion and Surface Bonding Lab

## INCREASE CAREER OPTIONS DUE TO FLUENCY IN MULTIPLE ASPECTS OF MECHANICAL ENGINEERING

- Benefit from a breadth of study in three areas:
  - Mechanics
  - Thermal Sciences
  - Materials
- Develop knowledge/skills to develop advanced mechanical engineering designs
- Effectively lead multidisciplinary teams
- Assume greater responsibility and managerial positions in technical firms
- Advance internally within your current company

## ADD IMMEDIATE VALUE TO YOUR EMPLOYER

- Improve capability in advanced mechanical engineering topics
- Solve company design and development problems using your increased skill-set
- Increase personal contributions to your engineering design team
- Take on greater leadership roles within your team and/or company

## ADMISSIONS REQUIREMENTS

- Submit a completed graduate application along with application fee
- Hold a bachelor's degree from an engineering school accredited by the Engineering Accreditation Commission of ABET, Inc.
- Have earned an undergraduate GPA of 3.0 overall
- Submit a GRE score on the general section of the test



### ALUMNI PERSPECTIVE

"Mercer's Engineering School provided me with invaluable tools that I can always fall back on. By combining a master's in mechanical engineering with my bachelor's in biomedical engineering, Mercer helped me to develop an outstanding set of skills that helped me to get the job I was looking for. The combination makes me extremely effective in my current position with a fast-growing company."

FELIPE ECHEVERRI Biorep Technologies, Inc.

## EXAMPLES OF RECENT THESIS TOPICS

1. Respiration influence of an oral appliance designed to relieve obstructive sleep apnea  
*Investigates the breathing patterns caused by an oral appliance used to treat obstructive sleep apnea.*
2. Analysis of the flow-axomene interaction of flagella motivating pump models for microfluids  
*Explores the flow-axomene interaction of flagella as it occurs in nature and investigates the potential contributions to improved microfluidic design.*
3. Development and characterization of a novel continuum robotic finger, as part of a multi-finger gripper design  
*Involves developing a multi-finger gripper in which each finger mechanism is based on hyper-redundant, continuum robotics with non-constant curvature in each joint section. A kinematic model and characterization of the finger and a two-digit gripper are developed, simulated, and compared to a physical prototype.*



### SCHOOL OF ENGINEERING

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