



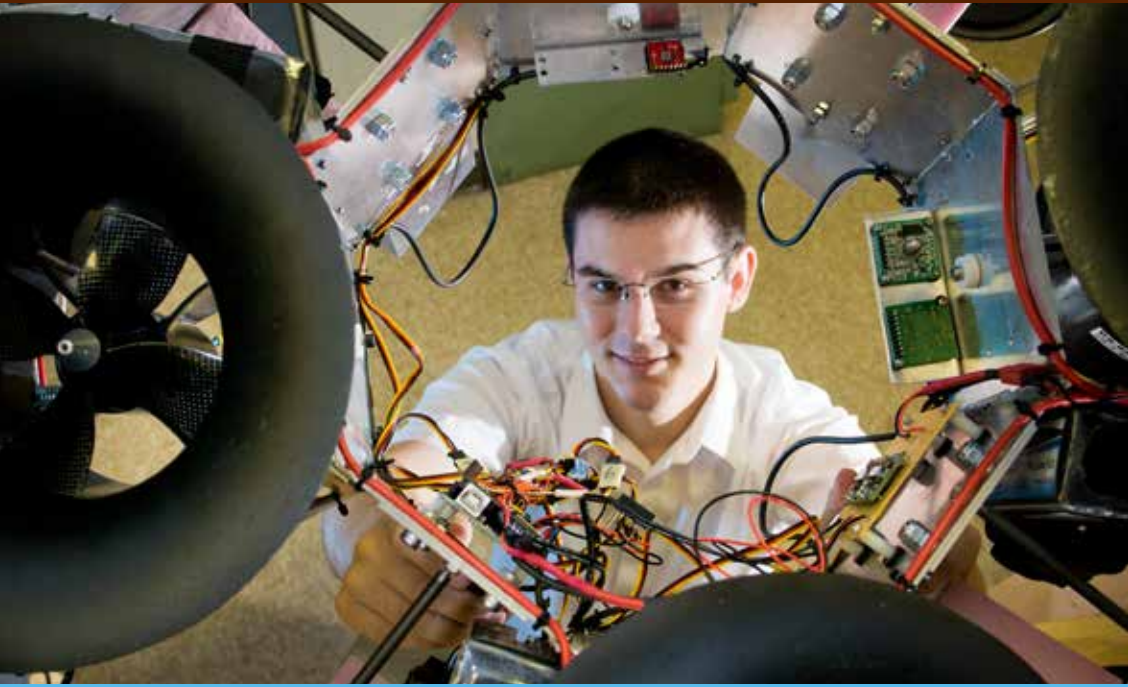
LEHIGH
UNIVERSITY

P.C. Rossin College of
Engineering and Applied Science



AEROSPACE & SPACE SYSTEMS ENGINEERING

MS Program



WHAT IS AEROSPACE & SPACE SYSTEMS ENGINEERING?

Lehigh's interdisciplinary master's degree program in Aerospace & Space Systems Engineering (AESE) equips students with the broad technical foundation needed to launch careers in the aerospace industry.

To meet today's most challenging mission requirements, modern high-performance aircraft, remotely controlled drones, launch vehicles, spacecraft, and hypersonic vehicles require a wide variety of technologies developed by interdisciplinary teams. Aerospace engineers must integrate these technologies into a robust and cost-effective design while supporting manufacturability and operational needs. To accomplish this, they must have a broad background in aerodynamics, propulsion, structures, materials, thermal design, power, communications, and guidance, navigation, and control (GN&C).

Lehigh's AESE program provides our graduates with this broad background, producing the next generation of technical innovators who are crucial to the future of the aerospace industry.



WHY AEROSPACE & SPACE SYSTEMS ENGINEERING?

YOUR BACKGROUND

Engineering
Applied Science
Physics
Mathematics
Manufacturing
Operations

YOUR PASSIONS

"I want to design and manufacture next-generation aircraft."
"I want to work in Mission Control."
"I'm an astrophysicist, and I want to design spacecraft to study our universe."
"I currently work in the aerospace industry and I want to be a program manager."



MS in AEROSPACE & SPACE SYSTEMS ENGINEERING



Addressing challenges involving...

AERODYNAMICS PROPULSION
OPERATIONS MANUFACTURING
GUIDANCE, NAVIGATION & CONTROL
LEADERSHIP DATA REMOTELY CONTROLLED SYSTEMS
MATERIALS LAUNCH FUSION DRONES ENGINEERING
VEHICLES PROGRAM MANAGEMENT
HYPERSONICS ASTRODYNAMICS
SPACE TRAJECTORIES COMMUNICATIONS AERO-THERMAL

OUR PROGRAM

The Curriculum

- ▶ Interdisciplinary approach
- ▶ 18 credits of AESE core courses
- ▶ 12 credits of interdisciplinary courses from:
 - ◆ Mechanical Engineering & Mechanics
 - ◆ Electrical & Computer Engineering
 - ◆ Industrial & Systems Engineering
 - ◆ Materials Science & Engineering
 - ◆ Physics
 - ◆ Earth & Environmental Sciences
- ▶ Optional thesis and project tracks

The Experience

- ▶ On campus and/or online
- ▶ Industry-embedded faculty from major R&D organizations and labs
- ▶ Multidisciplinary perspectives
- ▶ Career preparation through project-based experiential learning
- ▶ Mentoring from industry veterans

Master of Science in Aerospace & Space Systems Engineering core courses include:

Modern Aerospace Engineering
(required core course)

Advanced Astrodynamics

Space Propulsion Systems

Guidance, Navigation, and Control

Launch Vehicle Engineering

Data Fusion and State Estimation

Hypersonic Flows

Advanced Aerospace Vehicle Design

Concentrations available in:

Aerodynamics

Aerospace Systems

Space Systems Engineering

Technical electives can be chosen from over 30 courses offered by six departments.

How Will You Benefit?

In as little as 11 months for full-time students, you can prepare to launch an exciting career in the aerospace industry. For working professionals, the flexible part-time option is designed to help you broaden your experience and open doors to new roles. Throughout your program, you can tailor your course selection, technical electives, and projects to prepare for your chosen career path while learning from some of the aerospace industry's leading subject matter experts.



aerospace.lehigh.edu

WHAT SETS US APART

Flexible

- ▶ Courses offered in person and remotely (synchronous or asynchronous)
- ▶ Personalized mentoring from industry veterans
- ▶ Coursework-only and credit-bearing research project options available
- ▶ Full-time or part-time study

Broad

- ▶ Technology courses cover all disciplines important to aerospace engineering
- ▶ Unique focus on systems engineering and interdisciplinary perspectives
- ▶ Preparation for career paths in R&D, manufacturing, and operations

Our industry-embedded faculty are mentors and career coaches who bring experiences from top aerospace companies and labs including:

The Aerospace Corporation

Siemens

DoD

Northrup Grumman

Boeing

Lockheed Martin

SpaceX

Blue Origin

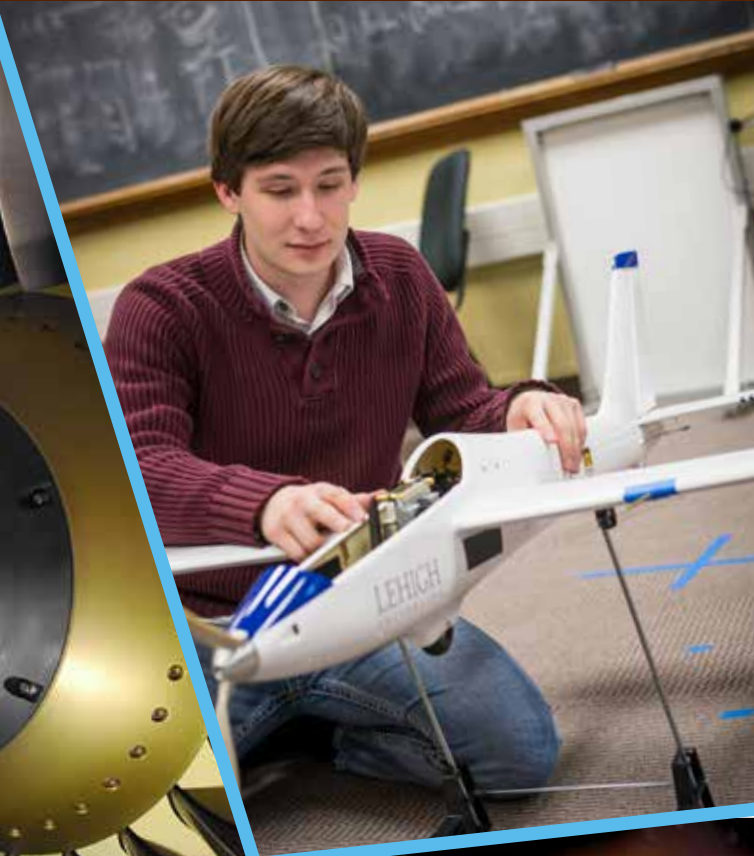
NASA

LEHIGH UNIVERSITY is located in the heart of the beautiful Lehigh Valley, the third largest metropolitan area in Pennsylvania. Home to top-notch entertainment, shopping, and restaurants, our region is also known for its seemingly endless array of opportunities for outdoor exploration and adventure.

Bethlehem is a vibrant city, rich in history and radiating small-town friendliness and feel. The arts are alive here, with exciting seasonal events, nationally recognized musical acts, comedy, art, and more. Known as the “City of Festivals,” Bethlehem hosts 20-plus major festivals and over 150 mini-festivals each year.

Need more action? Plan a day or weekend trip to New York City, Philadelphia, the Pocono Mountains, or the New Jersey and Delaware beaches—all within reach by car or public transportation.





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