

# Master of Science in Aerospace Engineering



## Master of Science in Aerospace Engineering

### Program Overview

The Master of Science in Aerospace Engineering (MSAE) distance education program is designed for students with an undergraduate degree in mechanical or aerospace engineering or a closely related field who wish to pursue a graduate degree in aerospace engineering. It is a 30 credit hour degree program that does not require a thesis, final oral exam or on-campus residency.

### Admission Requirements

Prerequisites for admission to the MSAE degree program include an undergraduate degree in engineering from an accredited institution with a minimum overall GPA of 3.0. Applicants must submit three (3) satisfactory letters of recommendation. Students majoring in other engineering fields may need to complete a number of undergraduate aerospace engineering courses prior to being accepted for admission. General Graduate Record Exam (GRE) scores are NOT required for admission.

The Graduate School requires that all international applicants take the TOEFL or IELTS examination if they have not received a degree from a U.S. institution or completed one year of study in the United States. The program does not currently accept international students who reside outside the continental U.S. You can find out more about the admission requirements at <https://www.mae.ncsu.edu/academics/graduate-programs/graduate-admission-requirements/>.

### Degree Requirements

- Completion of 30 credit hours of graduate level courses at the 500 or 700 level with an overall grade-point average of 3.0
- Completion of a minimum of six MAE courses
- Completion of three credits of MAE 586 – Project Work in Aerospace/Mechanical Engineering
- The remaining three courses may consist of any department approved graduate level engineering or mathematics course offered through Engineering Online (such as MA 501 or MA 502)

MSAE distance education students are permitted to take and attend courses on campus. However, approval must be obtained from the Director of Graduate Programs prior to registering. Under no circumstances can more than three courses taken on-campus be applied to satisfy the off-campus student's degree requirements. All requirements for the degree must be completed within six years of enrolling in the first course appearing on the NC State graduate transcript. Admitted students must comply with the Graduate School regulations for continuous enrollment or must request a leave of absence not to exceed one year. You can find out more about the degree requirements at <https://www.mae.ncsu.edu/MAE-Graduate-Degree-Requirements.pdf>.

### Course Registration

It is preferable to seek admission to the MSAE program as soon as possible to assure integration into the advising process. However, a person does not have to be admitted to a degree program to enroll in an online credit course. Prior to applying to Graduate School, a qualified individual may enroll in Engineering Online courses as a Non-Degree

Studies (NDS) student. The NDS classification is designed for individuals who wish to undertake academic work but who are not currently admitted to a degree program. If the student is admitted to the MSAE program, a maximum of twelve hours taken as a NDS student or from another institution may apply toward the 30 credit hour requirement. Students register for online courses through Engineering Online. Those who wish to take only a few courses and not pursue a degree do not need to apply for formal program admission to NC State University. However, students who wish to earn the MSAE degree must formally apply for admission to the Graduate School at <https://applygrad.ncsu.edu/apply/>. When completing the online application, please be sure to select the "Distance Track" version of the degree.

To register for an Engineering Online course log into <https://www.webtools.ncsu.edu/engronline/> and submit the registration form. Students cannot register through the University MyPack Portal system for Engineering Online courses.

## Course Offerings

A list of distance education courses available for each semester can be found on the Engineering Online website. Full-time employed individuals may only enroll in two online courses per semester. It is highly recommended that new students enroll in only one course during their first semester.

The following courses will be available through the Engineering Online program in various semesters.

MAE 501 Advanced Engineering Thermodynamics	MAE 545 Metrology for Precision Manufacturing
MAE 504 Fluid Dynamics of Combustion I	MAE 550 Foundations of Fluid Dynamics
MAE 505 Heat Transfer Theory and Application	MAE 551 Airfoil Theory
MAE 513 Principles of Structural Vibration	MAE 553 Compressible Fluid Flow
MAE 518 Acoustic Radiation I	MAE 561 Wing Theory
MAE 521 Linear Control & Design for MIMO Systems	MAE 562 Physical Gas Dynamics
MAE 533 Finite Element Analysis I	MAE 573 Hydrodynamic Stability and Transition
MAE 535 Design of Electromechanical Systems	MAE 589 Design for Strength and Endurance
MAE 537 Mechanics of Composite Structures	MAE 589 Mechanical Design Engineering
MAE 538 Smart Structures and Materials	MAE 589 Nanotechnology
MAE 539 Advanced Materials	MAE 742 Mechanical Design for Automated Assembly
MAE 541 Advanced Solid Mechanics I	MAE 776 Turbulence
MAE 543 Fracture Mechanics	MAE 789 Aerothermodynamics

For a list of distance education courses approved for the fall, spring or summer semester, visit the Engineering Online web site at <https://engineeringonline.ncsu.edu>.

## Course Logistics

Online courses are the same as on campus courses in terms of content, requirements and academic rigor. On-campus class lectures are captured, digitized and placed on the Internet for distance students to access at any time and from any location. Students must, however, follow the on-campus class schedule in terms of submitting homework and taking exams. Course assignments, lecture notes, and handouts are made available to distance students on the course website. All in-class exams must be proctored.

## Contact Information

- For more information about the MSAE degree program available online, contact:

Dr. Kara Peters, Director of Graduate Programs  
Department of Mechanical and Aerospace Engineering  
Telephone: 919.515.5226  
Email: [kjpeters@ncsu.edu](mailto:kjpeters@ncsu.edu)  
Department website: <https://www.mae.ncsu.edu>

- For more information about the registration process, course offerings and course logistics, contact:

Dr. Linda Krute, Director of Distance Education Programs  
College of Engineering  
Telephone: 919.515.5440  
Email: [linda\\_krute@ncsu.edu](mailto:linda_krute@ncsu.edu)  
EOL web site: <https://engineeringonline.ncsu.edu>