

# AEROSPACE ENGINEERING, M.S.

## Degree Requirements

An M.S. student must take a minimum of 24 hours of graded graduate courses and 6 hours of thesis credits leading to a thesis. For the M.S. degree, the student must take five required courses. All remaining course work must be taken from an approved list of courses, which includes engineering and mathematics courses numbered 500 or above. Other courses must be approved by the student's advisor and the graduate studies committee. All candidates for the M.S. degree must complete comprehensive assessment that is distinct from program course requirements.

## Program of Study for the Masters Program in Aerospace Engineering

### Required Courses

All M.S. and M.E. candidates in Aerospace Engineering will be required to take the five (5) core courses listed below:

Course	Title	Credits
EMCH 508	Finite Element Analysis in Mechanical Engineering	3
EMCH 577	Aerospace Structures I	3
EMCH 744	Aerodynamics & Flight Mechanics	3
EMCH 585	Introduction to Composite Materials	3
EMCH 721	Aeroelasticity	3
<b>Total Credit Hours</b>		<b>15</b>

### Elective Aerospace Courses

All students in Aerospace Engineering must take a minimum of two (2) courses from the following courses:

Course	Title	Credits
Select at least two of the following:		6
EMCH 743	Aircraft and Rocket Propulsion	
EMCH 777	Aerospace Structures II	
EMCH 522	Design for Manufacture and Assembly	
EMCH 544	Compressible Fluid Flow	
EMCH 516	Control Theory in Mechanical Engineering	
EMCH 532	Intermediate Dynamics	
EMCH 571	Mechanical Behavior of Materials	
EMCH 701	Methods of Engineering Analysis	
ENCP 707	Continuum Mechanics	
ECHE 721	Advanced Heat Flow Analysis	
EMCH 751	Advanced Heat Transfer	
EMCH 741	Viscous and Turbulent Flow	
EMCH 794	Thermodynamics	
EMCH 785	Design of Composite Materials for Aerospace Structures	
EMCH 881	Fatigue of Materials	
<b>Total Credit Hours</b>		<b>6</b>

### Other Elective Courses

All remaining work must be taken from an approved list of courses which currently includes all engineering courses numbered 500 or above and

math courses numbered 700 or above. Business courses numbered 500 or above may be taken with advance approval by the advisor and the Graduate Studies Committee. Other courses will be added to the list as approved by the faculty.

## Additional Program of Study Requirements

### Course and Program Grades

Courses **not** satisfying the requirements for a graduate degree are:

1. Any course with a grade of D+, D or F.
2. More than 12 credits with grade of C+ or below (the 4-C Rule).
3. Any course taken on a non-letter grade basis (except thesis).
4. More than 12 semester hours of credits from a previous graduate degree program.

The student must **maintain a minimum grade point average of 3.0** in:

1. All courses taken as part of the official degree program.
2. All courses numbered 700 or above.
3. All courses taken for graduate credit, including those not included in the official degree program.
4. Pass/Fail — A "fail" grade counts toward the 4-C rule.

### Publication Requirement for M.S. Students

An educational objective for M.S. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, an M.S. student is required to submit, based on research performed while at USC, at least one conference paper (or abstract with presentation) or one journal paper prior to graduation.

### Master's Thesis

A thesis is required of all students seeking the M.S. degree. The student's academic advisor must approve the subject of the thesis. The Graduate School will furnish general thesis regulations upon request. Any student who wishes to use University facilities or to confer with the faculty on thesis work must be officially enrolled for thesis credit.

### Thesis Committee

A student's M.S. Thesis Committee consists of the student's advisor and the second reader of the student's thesis.

### Thesis Presentation and Defense

The thesis presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense are to be conducted during normal business hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

### Comprehensive Examination

A comprehensive examination covering the major field of study is required of all candidates for the M.S. degree, which is conducted immediately following the thesis defense. The student's thesis committee administers this exam.