AEROSPACE ENGINEERING - M.S.

College of Aeronautics and Engineering
www.kent.edu/cae

Contact Information
• Program Coordinator:
  D. Blake Stringer
  Stephanie Fussell
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  330-672-2892
• Speak with an Admissions Counselor (gradadmissions@kent.edu)

Fully Offered
• Kent Campus

Admission Terms
• Fall
• Spring
• Summer

Description
The Master of Science degree in Aerospace Engineering provides an advanced theoretical and/or research-oriented curriculum with significant depth in aerospace-specific disciplines, beyond the general fundamentals of the engineering bachelor's degree.

Admission Requirements
• Bachelor's degree in aerospace engineering or a closely related area from an accredited college or university, for unconditional admissions.
• Minimum 3.000 undergraduate GPA (on a 4.000 point scale) for unconditional admissions.
• Official transcript(s)
• Goal Statement
• Three letters of recommendation
• English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning one of the following:
  • Minimum 550 TOEFL PBT score (paper-based version)
  • Minimum 79 TOEFL IBT score (internet-based version)
  • Minimum 77 MELAB score
  • Minimum 6.5 IELTS score
  • Minimum 58 PTE score
  • Minimum 100 Duolingo test score

For more information about graduate admissions, please visit the Graduate Studies website. For more information on international admission, visit the Office of Global Education website.

Program Learning Outcomes
Graduates of this program will be able to:

1. Conduct literature searches, comprehend advanced research materials and uncover connections between related work.
2. Perform research, discovery and integration by applying advanced knowledge of aerospace engineering.
3. Communicate problems and solutions in aerospace engineering clearly, both verbally and in writing.

Program Requirements
Major Requirements

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENGR 61091</td>
<td>GRADUATE SEMINAR</td>
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<tr>
<td>ENGR 65098</td>
<td>RESEARCH</td>
<td>3</td>
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<tr>
<td>Mathematics Elective, choose from the following:</td>
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<tr>
<td>MATH 50015</td>
<td>APPLIED STATISTICS</td>
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<tr>
<td>MATH 52011</td>
<td>MATHEMATICAL OPTIMIZATION</td>
<td></td>
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<tr>
<td>MATH 52031</td>
<td>MATHEMATICAL MODELS AND DYNAMICAL SYSTEMS</td>
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<tr>
<td>MATH 52045</td>
<td>PARTIAL DIFFERENTIAL EQUATIONS</td>
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<tr>
<td>MATH 52201</td>
<td>NUMERICAL COMPUTING I</td>
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<tr>
<td>MATH 52202</td>
<td>NUMERICAL COMPUTING II</td>
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Engineering-Focus Electives, choose one course from three focus areas:

Astronautics
- ENGR 58001 | ORBITAL MECHANICS                           |
- ENGR 58002 | SPACECRAFT ATTITUDE DYNAMICS, DETERMINATION AND CONTROL |
- ENGR 58004 | OPTIMAL CONTROL THEORY                       |

Dynamics and Control
- ENGR 58005 | LINEAR SYSTEM ANALYSIS AND CONTROL          |
- ENGR 58006 | NONLINEAR SYSTEMS AND CONTROL               |
- ENGR 58007 | DIGITAL CONTROL SYSTEMS                     |
- ENGR 58200 | AUTONOMOUS UNMANNED AERIAL SYSTEMS          |

Structure and Materials
- ENGR 52111 | STRENGTH OF MATERIALS FOR ENGINEERS         |
- ENGR 52363 | MATERIALS SELECTION IN DESIGN AND APPLICATIONS |
- ENGR 55901 | INTRODUCTION TO FINITE ELEMENT METHOD AND APPLICATIONS |

Systems and Design
- ENGR 55799 | AIRCRAFT DESIGN I                           |
- AERN 65270 | HUMAN FACTORS IN SYSTEMS DESIGN             |
- ENGR 58003 | SPACECRAFT DESIGN                           |
- ENGR 58100 | INTELLIGENT SENSING AND PLANNING OF UNMANNED AERIAL SYSTEMS |

Additional courses as approved by advisor

Engineering Electives, choose from the following:

- ENGR 55799 | AIRCRAFT DESIGN I                           |
- AERN 65250 | APPLIED HUMAN FACTORS ENGINEERING           |
- AERN 65270 | HUMAN FACTORS IN SYSTEMS DESIGN             |
- AERN 65280 | HUMAN INFORMATION PROCESSING                |
- ENGR 52111 | STRENGTH OF MATERIALS FOR ENGINEERS         |
- ENGR 52363 | MATERIALS SELECTION IN DESIGN AND APPLICATIONS |
- ENGR 55901 | INTRODUCTION TO FINITE ELEMENT METHOD AND APPLICATIONS |
- ENGR 57200 | SYSTEMS ENGINEERING                         |
ENGR 58001 ORBITAL MECHANICS
ENGR 58002 SPACECRAFT ATTITUDE DYNAMICS, DETERMINATION AND CONTROL
ENGR 58003 SPACECRAFT DESIGN
ENGR 58004 OPTIMAL CONTROL THEORY
ENGR 58005 LINEAR SYSTEM ANALYSIS AND CONTROL
ENGR 58006 NONLINEAR SYSTEMS AND CONTROL
ENGR 58007 DIGITAL CONTROL SYSTEMS
ENGR 58100 INTELLIGENT SENSING AND PLANNING OF UNMANNED AERIAL SYSTEMS
ENGR 58200 AUTONOMOUS UNMANNED AERIAL SYSTEMS

Additional courses as approved by advisor

Thesis or Non-Thesis Option, choose from the following: 6

Thesis Option
ENGR 65199 THESIS I

Non-Thesis Option
Courses from Major Electives

Minimum Total Credit Hours: 31

1 Students selecting the thesis option must successfully defend their research thesis in a public setting before the thesis committee. Upon approval of the thesis topic, the student is required to register continuously for ENGR 65199 each semester for a total of 6 credit hours. A student who has completed the required 6 credit hours of ENGR 65199 but has not finished the thesis is expected, thereafter, to register continuously for ENGR 65299 each semester until all degree requirements are met. No more than 6 credit hours of ENGR 65199 may be counted toward completion of degree requirements. Credit hours earned in ENGR 65299 do not, under any circumstances, count toward the degree.