PhD in Aerospace Engineering

Students Admitted with a Master of Science
Courses of study leading to the Doctor of Philosophy (PhD) degree are available with specializations in

- Aerodynamics and fluid mechanics;
- Structures and solid mechanics;
- Flight dynamics and control; and
- Multidisciplinary analysis and design.

Program Requirements
The total number of credit hours for a PhD in aerospace engineering is 72. The plan of study must include a minimum of 24 credit hours of coursework, 36 credit hours of dissertation, including up to 24 credit hours of relevant coursework from the MS degree. In addition, 12 credit hours must be taken as coursework, dissertation or a combination of both.

The plan of study will include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Select one of the following major areas</td>
<td></td>
<td>15</td>
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<tr>
<td>Aerodynamics and Fluid Mechanics</td>
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<tr>
<td>AE 711</td>
<td>Intermediate Aerodynamics</td>
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<tr>
<td>AE 716</td>
<td>Compressible Fluid Flow</td>
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<tr>
<td>AE 812</td>
<td>Aerodynamics of Viscous Fluids</td>
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<tr>
<td>Structures and Solid Mechanics</td>
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<tr>
<td>AE 722</td>
<td>Finite Element Analysis of Structures I</td>
<td></td>
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<tr>
<td>AE 731</td>
<td>Theory of Elasticity</td>
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<tr>
<td>AE 777</td>
<td>Vibration Analysis</td>
<td></td>
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<tr>
<td>Flight Dynamics and Controls</td>
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<td>AE 707</td>
<td>Modern Flight Control System Design I</td>
<td></td>
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<tr>
<td>AE 714</td>
<td>Advanced Flight Dynamics I</td>
<td></td>
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<tr>
<td>AE 773</td>
<td>Intermediate Dynamics</td>
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<tr>
<td>Multidisciplinary Analysis and Design (see advisor for details)</td>
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<tr>
<td>Select 15 credit hours outside the major area</td>
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<td>15</td>
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<tr>
<td>The student must declare a minor area defined by the advisory committee and select 6 credit hours in the minor (included in the 15 credit hours outside the major)</td>
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<tr>
<td>Select a minimum of 6 credit hours of mathematics/statistics</td>
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<td>6</td>
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<tr>
<td>Select 12 credit hours of coursework, dissertation or a combination of both</td>
<td></td>
<td>12</td>
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<tr>
<td>Select 24 credit hours of Dissertation</td>
<td>PhD Dissertation</td>
<td>24</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>72</td>
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</tbody>
</table>

See College of Engineering (http://catalog.wichita.edu/graduate/engineering/) for requirement details.

Graduate Courses
All graduate courses must be approved in advance of enrollment by a student’s graduate advisor.

Applied Learning
Students in the PhD in aerospace engineering - postbaccalaureate degree program are required to complete an applied learning or research experience to graduate from this program. The requirement can be met by successful completion and presentation of a dissertation.

Students Admitted with a Bachelor of Science
Applicants with a Bachelor of Science degree in aerospace engineering or a closely-related field must have:

1. A minimum grade point average of 3.250/4.000 over the last two years or approximately 60 credit hours, and
2. A letter of recommendation from a faculty member in the department of aerospace engineering at Wichita State University stating that he/she would be the student's academic and research advisor.

Continuation:
For the student to remain in the program, he/she must:

1. Maintain a minimum graduate GPA of 3.250/4.000 for every semester over the first 30 credit hours. Failing to do so, the student will be transferred to the Master of Science program in the appropriate category (full standing or on probation), or dismissed from graduate standing.
2. Demonstrate active involvement in research by producing publications in national/international conferences or journals by the completion of the first 30 graduate credit hours.

Qualifying Examination:
1. The qualifying exam is intended to reinforce and link pertinent high-level fundamentals. Upon passing the qualifying examination, a student is known as an aspirant for the PhD.
2. The exam, which covers major field core courses, is offered three times annually and may not be attempted more than twice.
3. The current guidelines require passing the qualifying exam with an 80 percent average with no single portion below 70 percent.
4. Students who fail to take the exam within three semesters (one year) from first enrollment, lose an attempt. Students failing to pass the exam within four semesters from first enrollment, are dismissed from the program.
5. Students who are dismissed from the doctoral program will be allowed to use the course credit hours completed toward a master's degree in aerospace engineering. However, the student must fulfill the master's thesis or project requirement.
6. A student who was dismissed from the AE doctoral program, but went on to successfully complete a master's degree in aerospace engineering, will not be allowed to enroll in the AE doctoral program again in the future.

Time Limits and Residency Requirement:
From the time the student starts to enroll in the program, no more than 10 years may elapse until all requirements for the degree have been completed.

Other Program Requirements:
All other program requirements are the same as those for the existing doctoral program (admission following the completion of a master’s degree).

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