University Scholars Program

The AEM Department’s University Scholars Program allows BSAE students to complete the requirements for both a BS in aerospace engineering and an MS in aerospace engineering and mechanics in a five-year period. The University Scholars Program allows for dual (graduate and undergraduate) course credit. A student in the program can earn up to nine hours of graduate credit towards their MS degree. Six of those hours can also count toward their BS degree in aerospace engineering—generally satisfying AE elective requirements.¹

Following successful completion of all requirements for the BSAE, students in the University Scholars program are awarded their undergraduate degree. Students then continue taking graduate courses until the requirements for the MS degree are met. Students in the University Scholars Program are classified as undergraduates until they complete all of the requirements for the undergraduate degree. They cannot hold graduate assistantships until they are classified as graduate students. At that time, University Scholars become eligible for graduate fellowships and scholarships. To be eligible for a graduate council fellowship, a student must have completed no more than 6 graduate-level hours.

Eligibility

Students are normally admitted to the AEM Scholars Program at the end of their junior year. To be considered for admission, BSAE students must:

a) meet the minimum GPA requirement for the University Scholars Program as set by the Graduate School (currently 3.3);

b) meet the minimum requirements for graduate admission as discussed here: [http://graduate.ua.edu/catalog/14300.html](http://graduate.ua.edu/catalog/14300.html)

c) have completed three-quarters of the total hours required for the BSAE degree and any minor, minimum of 94 (as applicable); transfer students must have completed the last 30 hours in residence;

d) have completed all of the core curriculum requirements; and

e) have been recommended by the department and submitted an application to the Graduate School.

The graduate catalog describes The University Scholars Program in detail. The above requirements are consistent with ‘Phase II’ admission into the program.²

Coursework

The essential differences between the curriculum for the BSAE and the curriculum followed by a student in the University Scholars Program are:

- Two appropriate level 3-credit hour AEM electives completed in the senior year apply for dual graduate and undergraduate credit (see list of courses below).

¹ Students not in the University Scholars Program who have a minimum GPA of 3.0 can take graduate courses for graduate credit (but not dual credit) in their senior year. This must be petitioned and approved prior to enrolling in the course. The course will only count for graduate credit, not undergraduate credit.

² [http://graduate.ua.edu/catalog/14300.html#usp](http://graduate.ua.edu/catalog/14300.html#usp)
A third 3-credit hour graduate course may be completed and applied for graduate credit but not towards undergraduate credit.

At the end of the ‘senior’ year, typical University Scholars Program students will have completed the requirements for the BSAE and earned 6 units towards their MS degree. Note that the graduate coursework must satisfy the requirements of an MS degree in AEM, which include two core courses and two mathematics courses, as specified in the graduate catalog and [http://aem.eng.ua.edu/graduate/](http://aem.eng.ua.edu/graduate/).

**AE Electives Eligible for Dual Credit**

In general, 500-level graduate courses may be used to meet the AE elective requirements toward the BSAE. Most graduate-level courses are taught on a one-, two- or four-year rotation; consult the course rotation document found on the MSAEM web page: [http://aem.eng.ua.edu/graduate/ms-program/](http://aem.eng.ua.edu/graduate/ms-program/).

A pre-approved 400-level AE elective can be completed for dual credit, but the Graduate School only permits a maximum of six (6) credit hours of 400-level coursework to be applied to a graduate degree. Furthermore, additional work is required for a 400-level course to count for graduate credit and a form must be completed and submitted to the graduate school before taking the course (see [http://graduate.ua.edu/academics/forms/approve_400.pdf](http://graduate.ua.edu/academics/forms/approve_400.pdf)).

**MSAEM Requirements**

MSAEM curriculum requirements are posted on the graduate page: [http://aem.eng.ua.edu/graduate/ms-program/](http://aem.eng.ua.edu/graduate/ms-program/). There are two plans (thesis and non-thesis); both require 30 hours of coursework which includes:

- six hours core coursework
- six hours mathematics coursework, including GES 554 PDE
- 12 hours of elective coursework
- six hours of thesis research (Plan I) or an additional six hours of elective coursework (Plan II)

Consult the catalog or web page for further requirements.

By arrangement with a faculty member, students may pursue special topics (or special projects) courses as elective credits. These appear as AEM 591 (or AEM 594) in published course schedules but are not open for enrollment without prior arrangement with the instructor. Special topics (or projects) courses can be added to the schedule up until the last day to add a course.

Tables 1 – 2 show sample AEM University Scholar course schedules for the junior and senior years. During the following academic year (summer, fall and winter), 24 hours would need to be completed to finish the program in the fifth year. This is not required. **Students should work with their prospective research advisor during their junior and senior years to appropriately plan their coursework.**

Students interested in the AEM University Scholars Program should contact the Graduate Program Coordinator, Dr. James P. Hubner ([phubner@eng.ua.edu](mailto:phubner@eng.ua.edu)).
Table 1. Typical BSAE curriculum, third and fourth years

<table>
<thead>
<tr>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>AEM 313 Aerodynamics</td>
<td>AEM 368 Flight Dynamics I</td>
</tr>
<tr>
<td>AEM 341 Aircraft Structures</td>
<td>AEM 413 Compressible Flow</td>
</tr>
<tr>
<td>AEM 349 Engineering Analysis</td>
<td>AEM 360 Astronautics</td>
</tr>
<tr>
<td>ME 215 Thermo</td>
<td>Engineering Elective</td>
</tr>
<tr>
<td>HU/L/FA Elective</td>
<td>HI/SB Elective</td>
</tr>
</tbody>
</table>

**16 hours** **16 hours** **15 hours** **16 hours**

* BSAE students must satisfy the computational elective requirement (AEM 420 CFD or AEM 461 FEM); AEM 520 CFD is both a computational course and graduate elective. Two graduate electives may be completed in the same semester.

**If HU/L/FA or HI/SB coursework is complete, then there is room for GES 554 PDE in the spring semester.

Table 2. Typical AEM University Scholars curriculum, third and fourth years

<table>
<thead>
<tr>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>AEM 313 Aerodynamics</td>
<td>AEM 368 Flight Dynamics I</td>
</tr>
<tr>
<td>AEM 341 Aircraft Structures</td>
<td>AEM 413 Compressible Flow</td>
</tr>
<tr>
<td>AEM 349 Engineering Analysis</td>
<td>AEM 360 Astronautics</td>
</tr>
<tr>
<td>ME 215 Thermo</td>
<td>Engineering Elective</td>
</tr>
<tr>
<td>HU/L/FA Elective</td>
<td>HI/SB Elective</td>
</tr>
</tbody>
</table>

**16 hours** **16 hours** **15 hours (3 grad)** **16 hours (3 grad)**

* BSAE students must satisfy the computational elective requirement (AEM 420 CFD or AEM 461 FEM); AEM 520 CFD is both a computational course and graduate elective. Two graduate electives may be completed in the same semester.

**If HU/L/FA or HI/SB coursework is complete, then there is room for GES 554 PDE in the spring semester.