AEROSPACE ENGINEERING, BS

The successful Aerospace Engineering student and professional is skilled in mathematics, physics, and computer programming and usage. He or she is also prepared to be diligent in completing assigned work.

Student Outcomes

The Bachelor of Science in Aerospace Engineering (BSAE) degree program at The University of Alabama can demonstrate that its graduates have:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- 3. an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- 5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Program Educational Objectives

Graduates of the Bachelor of Science in Aerospace Engineering (BSAE) program are expected within a few years after graduation to have:

- Established themselves as practicing professionals or pursued advanced study in aerospace engineering (or other professional fields of interest)
- Demonstrated their ability to work successfully as a member of a professional team and function effectively as responsible professionals
- Engaged in professional service (professional societies and/or community service)

Aerospace Engineering Curriculum

The College of Engineering enforces a C- or higher requirement for any course that is a pre-requisite for another required course. Click here for the details regarding the College of Engineering policy on repeating courses and residency.

Freshman

Fall	Hours Spring	Hours
MATH 125	4 MATH 126	4
CH 101 ¹	4 PH 105	4
Humanities (HU), Literature	3 ENGR 103 or 123	3
(L), or Fine Arts (FA) ²		

AEM 121 ³	1	EN 102	3
EN 101	3	AEM 249 ⁴	2
	15		16
Sophomore			
Fall	Hours	Spring	Hours
MATH 227	4	MATH 238 ⁶	3
PH 106	4	AEM 250	3
AEM 201	3	AEM 251	1
ENGR 161 ⁵	1	AEM 264	3
MATH 237 ⁶	3	AEM 311	3
		EC 110	3
	15	i	16
Junior			
Fall	Hours	Spring	Hours
AEM 313	3	AEM 368	3
AEM 341	3	AEM 413	3
AEM 351	1	ME 349	3
AEM 360	3	History (HI) or Social and	3
		Behavioral Sciences (SB) ²	
ME 215	3	Humanities (HU), Literature (L), or Fine Arts (FA) ²	3
Humanities (HU), Literature	3		
(L), or Fine Arts (FA) ²			
	16	i i	15
Senior			
Fall	Hours	Spring	Hours
AEM 402	3	AEM 404	3
AEM 408	3	AEM 451	3
AEM 468	3	Aerospace Engineering Elective ⁸	3
AEM 495	3	Engineering Elective ⁹	3
Aerospace Engineering	3	History (HI) or Social and	3
	15		15
	15		15

Total Hours: 123

Footnotes

- CH 100 will satisfy CH 101 requirement.
- ² All students must complete a sequence of two of the HI/SB or HU/L/ FA elective courses from the same department.
- ³ AEM 121 Intr. to Aerospace Eng. I is recommended, but can be satisfied by taking ENGR 111 Engineering for the Future or other engineering introductory courses.
- ⁴ A student may substitute CS 100 CS I for Majors (4 semester hours), CS 110 Honors CS I for Majors (4 semester hours), or RRS 101 and RRS 102 for AEM 249
- ⁵ ENGR 161 Small-Scale Eng. Graphics is recommended, but can be satisfied by taking ENGR 171 Large-Scale Eng. Graphics.
- ⁶ MATH 237 Introduction to Linear Algebra and MATH 238 Appld Diff Equations I may require a course that uses computers as a prerequisite such as AEM 249 Algorithm Devl Implementation; check with your advisor for a list of additional suitable courses.

- ⁷ Students may satisfy this requirement by successfully completing either AEM 420 Computational Fluid Dynamics or AEM 461 Computation Method Aero Struct. Consult here for pre/co-requisites.
- ⁸ Specific aerospace engineering and mechanics electives are offered regularly, but not necessarily every year. Undergraduate students with the required academic credentials may qualify to enroll in 500level courses.
- ⁹ Any 400-level, 3-hour AEM elective, any 300- or 400- level, 3-hour College of Engineering course, or MTE 271 Engr Matls: Struc Prop. Any honors section of a course accepted toward an engineering degree may be applied in place of the non-honors section.

A BSAE degree is generally an entry level requirement for various careers such as design, development, testing, and research in both the public and private sectors. This degree would also provide an excellent background for students wishing to attend graduate school in other areas of engineering, sciences, medicine, law, or business. The program has successful graduates in all of these areas.

Types of Jobs Accepted

Aerospace Engineer, Aero Thermo Technology, Inc., Huntsville, AL; Structural Design Engineer at Northrop Grumman Aerospace Systems; Engineer at Teledyne Technologies, Huntsville, AL; Graduate Students at Purdue University, University of Texas-Austin, MIT, and The University of Alabama

Jobs of Experienced Alumni

Senior Pre-sales Analyst at Cray Inc.; Director of Aviation and Missile Research, Development and Engineering Center, Huntsville, AL; Systems Engineer (Sr. MTS) at The Aerospace Corp., El Segundo, CA; CEO of Aerotonomy, Inc., Atlanta, GA; former Chief Scientist of AFRL

Learn more about opportunities in this field at the Career Center