

ARCHITECTURAL ENGINEERING, BS

Architectural engineering students are interested in how buildings are designed, how they stand up against the forces of nature, and how they are built and maintained. Students are also concerned with how buildings function as a coordinated set of structural, electrical, communication, and mechanical systems. Architectural engineers are also interested in how these systems support a building's mission and its occupants' needs in a sustainable manner. They are creative problem solvers addressing national and international challenges of energy needs, sustainable new and reconditioned building systems, urban development, and community planning.

Program Educational Objectives

The educational objectives of the University of Alabama's Bachelor of Science in Architectural Engineering (BSArchE), program is to have graduates who, within a few years of graduation, are in demand and lead fulfilling professional careers, in their chosen area of professional practice, through their demonstrated abilities to:

1. Apply foundational knowledge of mathematics, science, humanities, and social sciences; and
2. Synthesize technical knowledge of engineering analysis and design to identify, formulate, and solve problems; and
3. Employ their professional practice skills.

Student Outcomes

Students, upon completion of the BSArchE, program, will be able to:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that met 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.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, 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 judgement to draw conclusions.
7. An ability to require and apply new knowledge as needed, using appropriate learning strategies.

All students are strongly encouraged to prepare for and pass the Fundamentals of Engineering (FE) examination prior to graduation.

Architectural Engineering Curriculum

Freshman

Fall	Hours	Spring	Hours
CE 121 or ENGR 111	1	ENGR 171	1
MATH 125 or 145	4	MATH 126 or 146	4
ENGR 103 or 123	3	PH 105 or 125	4

EN 101	3	EN 102	3
CH 100, 101, or 117	4	History (HI) or social and behavioral sciences (SB) elective. ^{1,4}	3

15 **15**

Sophomore

Fall	Hours	Spring	Hours
CE 260	2	CE 262	3
AEM 201	3	AEM 250	3
MATH 227 or 247	4	AEM 264	3
GES 255	3	MATH 238	3
Approved natural science (N) elective ²	4	PH 106 or 126	4

16 **16**

Junior

Fall	Hours	Spring	Hours
CE 331	3	CE 340	4
CE 366	3	CE 434	3
AEM 311	3	ECE 350	3
ECE 320	3	ME 216	3
History (HI) or social and behavioral sciences (SB) elective ^{1,4}	3	History (HI) or social and behavioral sciences (SB) elective ^{1,4}	3

15 **16**

Senior

Fall	Hours	Spring	Hours
Senior (plan of study) elective ³	3	CE 406	4
CE 433	3	CE 462	3
ME 407	3	Senior Plan of Study Elective ³	6
ARH 252 or 253	3	Humanities (HU), literature (L), or fine arts (FA) elective ^{1,4}	3
COM 123 or 124	3		

15 **16**

Total Hours: 124

Footnotes

¹ Students are encouraged to consider EC 110 Principles of Microeconomics as an SB, CE 220 Society Infrastruct & Environm as an SB, and/or a foreign language as an HU.

² Approved natural science (N) electives include:
 BSC 114 Principles Of Biology I and BSC 115 Laboratory Biology I or BSC 118 Honors General Biology I
 CH 102 General Chemistry or CH 118 Honors General Chemistry
 GEO 101 The Dynamic Earth
 GEO 102 The Earth Through Time
 GEO 105 Sustainable Earth
 GY 101 Atmospheric Proc & Patterns
 GY 102 Earth Surface Processes
 GY 207 Field Water and Climate

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³ See CCEE Department or Advisor.

⁴ The College of Engineering core curriculum requires a minimum of nine hours of HU, L, or FA courses and nine hours of HI or SB courses.

Students must satisfy the College of Engineering in-depth requirement (minimum of six hours in one core designation (HU, L, FA, HI or SB) in the same discipline (subject)).

[Click here for a list of UA Core Courses.](#)

The College of Engineering requires a grade of "C-" or better be earned in all courses that are a pre-requisite to classes used to fulfill degree requirements. If a grade lower than "C-" is received in a course that is a pre-requisite, that course must be repeated and a grade of "C-" or higher must be earned before enrolling in the subsequent course.

All architectural engineering students are strongly encouraged to prepare for and pass the Fundamentals of Engineering (FE) examination prior to graduation. A graduate of the program who has passed the FE exam would then be an engineer intern under Model Law as maintained by the National Council of Examiners for Engineering and Surveying (ncees.org). It is recommended that the FE be taken the semester prior to graduation.

Related department policies and updates of catalog information are posted on the department website.

Architectural engineers work in a wide spectrum of careers centered on building systems. Architectural engineering graduates can serve as designers of structural, lighting, HVAC, and building energy systems. They work as construction and constructability experts, urban and city planners, project managers, and green building leaders. They are highly involved in the complicated and creative arena of bringing older, historic, and large office and governmental buildings back into productive use.

Learn more about opportunities in this field at the Career Center