Abilene Approval Chart for Curriculum Changes

A = Approve I = Information Item R = Respond in Writing

Course Number _____ or Degree Plan(s) BSE ENGR - IE

State the requested change and reason. A memo may be attached if more space is necessary.

ENGR - The change to Gen.Ed. resulted in a net increase of one hour to the Engineering degree plans. We are reducing the number of hours required in our "Math/Science" selection by one to account for this

Indicate the requested change.

	Change to a Course	Dept./School[1]	College	Dean	TEC	UGEC	AUAC/Grad	Provost	President
1.	Title (description unchanged)	A	A	A	I	–	I	I	I
2.	Description (not affecting content)	A	A	A	I	–	I	I	I
3.	Course term(s)	A	I	A	I	–	I	I	I
4.	Content (change of course outcomes)	A	A	A	I	–	I	A	I
5.	Number of hours (lecture, lab, contact)	A	A	A	A	–	A	A	I
6.	Course number within the hundred	A	A	I	I	–	I	I	I
7.	Course number beyond the hundred	A	A	A	A	–	A	A	I
8.	Prerequisites	A	A	A	I	–	I	I	I
9.	Course fee(s)	A	–	A	–	–	–	A	I
10.	From U to G *or* G to U	A	A	A	A	–	A	A	I
11.	Cross-list course	A	A	A	A	–	A	A	I
12.	Department of record	A	A	A	A	–	A	A	I
13.	Close a course	A	A	A	A	–	A	A	I
14.	New course (includes combining or splitting courses)	A	A	A	A	–	A	A	I

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	Change to the University Requirements (All Campuses)	Dept./School[1]	College	Dean	TEC	UGEC	AUAC/Grad	Provost	Faculty	President	Trustees
1.	University Requirements — Change course outcomes of an included course[2]	A	A	A	–	A	–	A	–	A	–
2.	University Requirements — Add or drop a required course from the University Requirements[2]	A	A	A	–	A	–	A	A	A	–
3.	University Requirements — Add or drop a course from a menu within the University Requirements[2]	A	–	–	–	A	–	A	–	A	–
4.	University Requirements — Change hours within a menu in the University Requirements[2]	A	A	A	–	A	–	A	A	A	–
	Change to Catalog Information (for Campus)										
1.	General Requirements for Bachelor's Degrees and Associate's Degrees	–	–	–	–	–	A	A	A	A	–
2.	Policies governing academic probation and suspension	–	–	–	–	–	A	A	A	A	–
3.	Requirements for graduating with honors	–	–	–	–	–	A	A	A	A	–
	Change to a Degree Plan Proposed by Faculty or College										
5.	Educational Program — Revise[3]	A	A	A	A	–	A	A	–	A	–
6.	Educational Program — Adopt/change admission requirements	A	A	A	A	–	A	A	–	A	–
7.	Educational Program — Add[3]	A	A	A	A	–	A	A	A	A	I
8.	Educational Program — Discontinue	A	A	A	A	–	A	A	A	A	I
9.	GPA — Revise program-required GPAs	A	A	A	A	–	A	A	–	A	–
10.	Minor — Revise	A	A	A	I	–	I	I	–	I	–
11.	Minor — Add	A	A	A	A	–	A	A	–	A	–
12.	Minor — Discontinue	A	A	A	A	–	A	A	–	A	–
13.	Degree — Add	A	A	A	A	–	A	A	A	A	I
14.	Degree — Discontinue	A	A	A	A	–	A	A	A	A	I
	Change to a Degree Plan Proposed By Provost										
15.	Educational Program — Discontinue	R	–	R	A	–	A	A	A	A	I
16.	Minor — Discontinue	R	–	R	A	–	A	A	–	A	–
17.	Degree — Discontinue	R	–	R	A	–	A	A	A	A	I

[1] When an academic unit does not have a council, the UGEC and/or UUAC will serve as its academic council, depending on the nature of the issue.

[2] Courses that satisfy ACU's University Requirements will normally have lower-level numbering, be free of prerequisites and co-requisites, appeal to more than one or two majors, and "not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession" (SACS 2.7.3). Departments may request exceptions to the first three criteria.

[3] For undergraduate majors, a minimum of 30 hours is required. These programs must have a minimum of 6 elective hours, unless the requirements of external accrediting bodies make it impossible.

Revised 8-29-22

Department/School Chair(s)

Feb 1, 2023

Signature | *Approval date*

Signature | *Approval date*

College Academic Council(s)

Jonathan Camp | 02/15/2023

Signature | *Approval date*

Signature | *Approval date*

Dean(s)

Mar 1, 2023

Signature | *Approval date*

Signature | *Approval date*

Teacher Education Council

Chair's signature | *Approval date*

University General Education Council

Chair's signature | *Approval date*

Abilene Undergraduate Academic Council

Chair's signature | *Approval date*

Graduate Council

Chair's signature | *Approval date*

Provost

Signature | *Approval date*

Faculty

Chair of Faculty Senate | *Approval date*

President

Signature | *Approval date*

Engineering, Industrial Engineering, BSE (ENGR-IE)

BSE: Engineering (ENGR)

Abilene Christian University offers a Bachelor of Science in Engineering degree (BSE) with concentrations in civil, electrical, industrial, and mechanical engineering. The engineering program is accredited by the Engineering Accreditation Commission of ABET (www.abet.org).

General Departmental Requirements

Engineering majors must develop mathematical skills as well as design, experimental, and computational abilities. If the student does not qualify to take Precalculus II (MATH 124) when the student enters ACU, his or her graduation may be delayed.

Program Educational Objectives

The ACU engineering program strongly supports the university's mission of educating students for Christian service and leadership throughout the world. In support of the university mission and in response to the needs of program constituents, the Program Educational Objectives (PEOs) are that within a few years of graduation:

1. Alumni are succeeding in engineering practice or other diverse fields that value analytical, problem solving, and professional practice skills.
2. Alumni are engaging in life-long learning that builds upon foundational knowledge acquired in their undergraduate education through graduate study, career-specific training, or other professional training.
3. Alumni are glorifying God through thoughtful integration of work and life, facilitating service to others through their profession.

Student Outcomes

The following student outcomes will prepare ACU engineering students to attain the program educational objectives:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments as well as to analyze and interpret data.

- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for and an ability to engage in life-long learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

University Requirements

Please see the University Requirements section of this catalog.

Major Requirements

Chemistry

- CHEM 133 - General Chemistry I Credit Hours: 3
- CHEM 131 - General Chemistry Laboratory I Credit Hours: 1

Total: 4 Credit Hours

Engineering

- ENGR 115 - Introduction to Engineering and Physics Credit Hours: 1
- ENGR 116 - Introduction to Engineering and Physics Laboratory Credit Hours: 1
- ENGR 117 - Computational Tools for Engineering and Physics Credit Hours: 1
- ENGR 131 - Computer Aided Design and Modeling Credit Hours: 1
- ENGR 135 - Introduction to Electric Circuits Credit Hours: 3
- ENGR 136 - Introduction to Electric Circuits Laboratory Credit Hours: 1
- ENGR 217 - Engineering Career Skills Credit Hours: 1
- ENGR 221 - Statics and Dynamics Credit Hours: 4
- ENGR 281 - Engineering Thermodynamics Credit Hours: 3
- ENGR 306 - Engineering Ethics Credit Hours: 1
- ENGR 317 - Engineering Project Management Credit Hours: 1
- ENGR 333 - Fluid Mechanics Credit Hours: 3
- ENGR 350 - Engineering Economics Credit Hours: 3 *
- ENGR 377 - Statistics for Engineers Credit Hours: 3
- ENGR 390 - Junior Clinic Credit Hours: 3
- ENGR 430 - Senior Clinic I Credit Hours: 3 (capstone course)

- ENGR 432 - Senior Clinic II Credit Hours: 3 (capstone and writing-intensive course)
-
- *Hours may also fulfill university requirements and are not included in total major hours

Total: 33 Credit Hours

Mathematics

- MATH 185 - Calculus I Credit Hours: 3 *
- MATH 186 - Calculus II Credit Hours: 3 * [remove asterisk]
- MATH 286 - Calculus III Credit Hours: 3
- MATH 361 - Ordinary Differential Equations Credit Hours: 4
-
- *Hours may also fulfill university requirements and are not included in total major hours

Math/Science Selections

Choose ~~4~~ 3 hours from the following:

- ~~MATH 187 - Calculus Computer Laboratory Credit Hours: 1~~
- MATH 341 - Numerical Methods Credit Hours: 3
- MATH 325 - Linear Algebra Credit Hours: 3
- MATH 463 - Partial Differential Equations Credit Hours: 3
- BIOL 121 - Introductory Biology I or above (excluding BIOL 203) Credit Hours: 3
- CHEM 114 - Introductory Organic and Biological Chemistry or above (excluding CHEM 203) Credit Hours: 3
- PHYS 330 - Modern Physics or above (excluding PHYS 360, PHYS 362, PHYS 363, PHYS 379, PHYS 388, PHYS 401, PHYS 481, and PHYS 499) Credit Hours: 3

Total: ~~11~~ 13 Credit Hours

Philosophy

- PHIL 379 - Philosophy, Religion and Science Credit Hours: 3 *
-
- *Hours may also fulfill university requirements and are not included in total major hours

Total: 0 Credit Hours

Physics

- PHYS 220 - Engineering Physics I Credit Hours: 3 *
- PHYS 221 - Engineering Physics I Laboratory Credit Hours: 1
- PHYS 222 - Engineering Physics II Credit Hours: 3 *

- PHYS 223 - Engineering Physics II Laboratory Credit Hours: 1
-
- *Hours may also fulfill university requirements and are not included in total major hours

Total: 2 Credit Hours

Total Major Requirements: ~~50~~ 52 Credit Hours

Industrial Engineering (IE)

Choose 19 hours from the following courses:

- ENGR 251 - Engineering Management Credit Hours: 3
- ENGR 320 - Material Science Credit Hours: 3
- ENGR 321 - Manufacturing Processing Laboratory Credit Hours: 1
- ENGR 332 - Mechanics of Materials Credit Hours: 3
- ENGR 351 - Statistical Quality Control Credit Hours: 3
- ENGR 352 - Engineering Optimization Credit Hours: 3
- ENGR 353 - Management Systems and Production Planning Credit Hours: 3
- ENGR 450 - Systems Simulation Credit Hours: 3

Industrial Engineering Elective

- ENGR 300-498 Credit Hours: 3

Total: 22 Hours

Electives

Minimum - 0 Credit Hours

Total Major Hours: ~~72~~74

Other Graduation Requirements

Minimum grade for PHYS or ENGR courses: C
Minimum GPA for graduation: 2.00

Minimum advanced hours: 33
Minimum total hours: 128

*Courses numbered 0** do not count in minimum hours required for degree.*