Approval Chart for Curriculum Changes

A = Approve I= Information Item[1] R= Advise & Respond[2]

Course Number ENGR 115 or Degree Plan(s) BSE, BS PHYS

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

As a result of the 20/20 grant sponsored by the Provost Office, as well a,s departmental discussion. ENGR 115 will be dropped by 1 hour. It will be a LLB as student will still have lecture and lab throughout the semester. The need occurs as a new engineering computation course is needed to better prepare students. Additionally it will allow for a two semester intro sequence which has shown in the literature to improve retention in Engineering. There will not be significant course content dropped outside of programming (a 4 week unit in the course currently).

Summary of Changes:
Change from LEC to LLB
Course hours from 2 to 1
Contact hours no change.

Circle the number that corresponds to the requested change. Degree plan changes are on the second page.

					COUNCIL?					
	Change to a Course	**Dept./School**	**College Academic**	**Deans**	**TEC**	**UGEC**	**UUAC**	**GRAD**	**Provost**	**President**
1.	Title (description unchanged)	A	A	A		I			I	I
2.	Description (not affecting content)	A	A	A		I			I	I
3.	Course term(s)	A	I	A		I			I	I
4.	Content (substantive change)	A	A	A		I			A	I
5.	Number of hours (lecture, lab, contact)	A	A	A		A			A	I
6.	Course number within the hundred	A	A	I		I			I	I
7.	Course number beyond the hundred	A	A	A		A			A	I
8.	Prerequisites	A	A	A		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	I
11.	Cross list with another department: U or G level	A	A	A		A			A	I
12.	Department of record	A	A	A		A			A	I
13.	Open or close a course	A	A	A		A			A	I

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14.	New course — See website for application and process. This change includes combining or splitting a course(s).	A	A	A	A	A	I

Note: 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.

	Change to a Degree Plan	Dept./School	College Academic	Deans	TEC	UGEC	UUAC	GRAD	Provost	Faculty	President	Board of Trustees
1.	University Requirements — Change in approved course content[6]	A	A	A	A				A	--	A	I
2.	University Requirements — Add or drop a required course from the University Requirements chart[6]	A	A	A	A				A	A	A	--
3.	University Requirements — Add or drop a course from a menu within the University Requirements[6]	A	--	--	A				A	--	A	--
4.	University Requirements — Change hours within a menu on the University Requirements chart[6]	A	A	A	A				A	A	A	--
5.	Major — Revision of major [4,5]	A	A	A	A				A	--	A	--
6.	Major — Adopt or change admission requirements	A	A	A	A				A	--	A	--
7.	Major — Add [4,5]	A	A	A	A				A	A	A	I
8.	Major – Discontinue (proposed by the department or college)	A	A	A	A				A	A	A	I
9.	Major – Discontinue (proposed by the Provost)	See below.										
10.	GPA — Revise major or cumulative requirement	A	A	A	A				A	A	A	--
11.	Minor — Revise course selection	A	A	A	I				I	--	I	--
12.	Minor — Add	A	A	A	A				A	--	A	--
13.	Minor – Discontinue (proposed by the department or college)	A	A	A	A				A	--	A	--
14.	Minor – Discontinue (proposed by the Provost)	See below.										
15.	Degree — Add	A	A	A	A				A	A	A	I
16.	Degree – Discontinue (proposed by the department or college)	A	A	A	A				A	A	A	I
17.	Degree – Discontinue (proposed by the Provost)	See below.										
18.	Any change to a graduate degree program	A	A	A	A				A	--	A	--

COUNCIL[3]

COUNCIL[3]

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	Change to the Catalog Information	Dept./School	College Academic	Deans	COUNCIL[3] UGEC	UUAC	GRAD	Provost	Faculty	President
1.	General requirements for graduation including course requirements that are common to all majors for all degrees[7]	--	--	--	A			A	A	A
2.	Admission requirements	--	--	--	A			A	A	A
3.	Policies governing academic probation and suspension	--	--	--	A			A	A	A
4.	Requirements for graduating with honors	--	--	--	A			A	A	A

[1] Councils may request additional information about "Information" items. These items are approved as "Consent Agenda."

[2] The Dean and Department should respond to the Provost's recommendation to close a program in writing. Advise & Respond (R) requires that the voting body should receive the written responses at least one week prior to the vote.

[3] All courses that meet University Requirements for general education must go through UGEC. Courses or degrees offered only to students seeking teacher certification must go through the Teacher Education Council. All undergraduate changes must go before the UUAC. All graduate degree plan changes must go through the Graduate Council.

[4] A minimum of 30 hours is required for a major. A maximum is specified for each degree (e.g., BA, BS). The university minimum for elective hours is 6, unless the requirements of external accrediting bodies make it impossible.

[5] Program or course changes that apply to any major that includes Teacher Certification will be reviewed by the college, the Teacher Education Council (TEC), and then the UUAC.

[6] Courses that satisfy ACU's University Requirements (General Education) 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.

[7] The UUAC approved the clarification that "general requirements for graduation" means the enumerated items in the "General Requirements for Bachelor's Degrees" section of the catalog.

Revised 8-26-19

Curriculum/Catalog Changes Signature Page

Department/School Chair(s)

Signature	11/13/19 *Approval date*
Signature	*Approval date*

College Academic Council(s)

Signature	1-24-2020 *Approval date*
Signature	*Approval date*

Dean(s)

Signature	1/29/2020 *Approval date*
Signature	*Approval date*

Teacher Education Council

Chair's signature	*Approval date*

General Education Council

Chair's signature	*Approval date*

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*

Introduction to Engineering & Physics – ENGR 115
Abilene Christian University
Fall 2019

Course Description
This course is an introduction to the career fields of engineering and physics. In particular, this course will address subfields within engineering and physics, the tools and methods used in these fields, and the processes used in modeling and problem solving. Excel and programming will be used extensively for both problem solving and modeling.
Prerequisites: Concurrent enrollment in MATH 124 or higher and ENGR 116.
Credit hours: 2. Contact hours:2

Class Meeting Times and Location
Section 1 meets Monday and Wednesday, 9:00 a.m. to 9:50 a.m. in Bennett 119.
Section 2 meets Monday and Wednesday, 10:00 a.m. to 10:50 a.m. in Bennett 119.

Required Text and Software
The required text for this course is *Thinking Like an Engineer: An Active Learning Approach (4rd Edition)*, by Elizabeth A. Stephan, et al.

In this class we will use Microsoft Excel as well as freely available software

Required Materials
All students are required to purchase an Arduino kit from the department. You will use your kit extensively in class and in lab. We will announce when these kits are available.

Additional References
i. www.acu.edu/canvas
ii. https://blogs.acu.edu/learningstudio/lynda/
iii. www.khanacademy.org
iv. www.codeacademy.com

Catalog Description
An introduction to the career fields of engineering and physics. Topics include sub disciplines within engineering and physics, tools and methods used in these fields, and the processes of modeling and problem solving. Computational, analytical and design tools will also be introduced.

Contact Information

Name:	Dr. Michael Daugherity, Associate Professor of Engineering and Physics
Office:	Onstead 121C
Phone:	325-674-5055
Email:	mike.daugherity@acu.edu
Office hours:	MW 1-3, TR 9:30-11 or by appointment

Name:	Dr. Timothy Kennedy, Assistant Professor of Engineering and Physics
Office:	Onstead 137D
Phone:	325-674-2854
Email:	timothy.kennedy@acu.edu
Office hours:	M 3-4, T 1-4, R 9:30-11 and 1-2:30, or by appointment

Learning Objectives
In this course students will learn to: approach problems like engineers and physicists, understand the role of models in problem solving, understand the strengths and limitations of models, appreciate the fields of engineering and physics, develop computational and programming skills, demonstrate fundamental skills in engineering and physics, and implement simple designs to solve problems. The degree to which you achieve these objectives will be measured using homework, quizzes, projects and tests.

Competencies
By the end of this course students will be able to:

1) Demonstrate an ability to research, formulate, and justify ethical decisions faced by engineers and physicists using critical thinking skills.
2) Attain an ability to collect and analyze data, process statistics, and visualize data.
3) Identify good study and test taking habits
4) Apply math and science concepts to engineering and physics problem solving
5) Comprehend and apply the engineering design process to solve complex problems
6) Use computational tools for processing, analyzing, and visualizing data, modeling physical processes, and finding solutions.
7) Explore collegiate and career opportunities in engineering and physics, the type of work these professions engage in, and how to prepare for and succeed in these fields.

These competencies will be assessed using homework, quizzes, tests, projects, and group discussion/class participation.

ABET Outcomes:
These activities of this course support the assessment of following ABET outcomes

Criterion 3:

(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

(4) 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

Grading Policy

Homework
Homework will likely be assigned daily and will be due at the beginning of the next class. **NO LATE WORK WILL BE ACCEPTED** (*In order to assist students in developing the discipline of meeting deadlines, assignments must be turned in on time in order to receive credit. Students who are absent, for any reason and including absences for University approved activities, on the day an assignment is due should contact the instructor before the assignment is due for directions)*. Each student is expected to turn in his or her own work. It is fine to complete homework in groups, but each student is responsible for the material.

All handwritten quantitative homework solutions must be submitted on engineering paper. *ESA engineering paper may be purchased from the department. Please visit Mr. Chad Longley in Bennett Gymnasium to purchase.*

Quizzes
Quizzes will be given frequently and usually at the beginning of class. Thus, it is important that you be in class and on time to complete the quiz. No makeup quizzes will be given except in the rare circumstances of pre-approved absences. Quiz material will cover the text reading assignment for that day or material covered in previous meetings. No unauthorized help may be given or received on the quizzes.

Exams
One or more regular exams and one final exam will be given during the semester. The final exam is comprehensive. Exams will be closed book and no unauthorized help may be given or received on the exams. Calculators may be used during the exams or other in-class graded activities, only NCEES approved calculators will be permitted. This is to help you begin preparing for the FE exam. Also per NCEES policy, software that simulates approved calculators will not be permitted. The NCEES policy may be reviewed at http://ncees.org/exams/calculator/. ***If you are unsure about your calculator, it is your responsibility to check with the instructor for approval.*** If you are caught using a non-approved calculator, you will not be allowed to complete the activity, and you will receive a zero for that activity (including tests).

The approved calculators include the following:

- Hewlett Packard – HP 33s, HP 35s, and no other
- Casio – All FX-115 models. Any Casio calculator must contain FX-115 in its model name.
- Texas Instruments – All TI-30X and TI 36X models. Any TI calculator most contain either TI-30X or TI-36X in its model name.

Calculation of Final Course Grade
The final course grade will be weighted and assigned as follows:

Homework	35%
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90% and above	A
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Note: The grade you earn in lecture is separate from the grade you earn in the accompanying lab (ENGR 116).

Student Conduct Policy
Students are expected to show respect for one another, the professor, and for Abilene Christian University property and to adhere to the "Student Regulations" as stipulated in the ACU Catalog and Student Handbook. Cheating, lying, and other forms of academic misconduct are incompatible with Christian faith and action. Sanctions up to and including dismissal from the class with a failing grade may be imposed for engaging in these actions. Students are also expected to adhere to the dress code policy as outlined in the ACU Student Handbook. Failure to adhere to the dress code may result in an unexcused absence and quiz grade of zero for each offense. Repeated failure to adhere to these standards may result in a grade reduction or course withdrawal and/or other actions as deemed appropriate and consistent with ACU guidelines.

Attendance Policy
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https://www.acu.edu/community/offices/administrative/office-of-the-provost/academic-integrity-policy/expanded-definitions-and-advice.html

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To educate students for Christian service and leadership throughout the world.

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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:

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MEMO

From: Jess Dowdy, Chair Engineering and Physics

To: ACU Councils

Re: PHMT in Light of ENGR Proposals

Date: 3/30/2020

With the change of hours for ENGR 115 (from 2 hrs to 1 hr), the PHMT degrees *will* change since ENGR 115 is required. Please adjust the number of elective hours to accommodate this change.