

Approval Chart for Curriculum Changes

A = Approve I = Information Item¹ R = Advise & Respond²

Course Number ENGR 221 or Degree Plan(s) _____

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

See Attached

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

Change to a Course		Dept./School	College Academic	Deans	COUNCIL ³				Provost	President
					TEC	UGEC	UUAC	GRAD		
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	A
5.	Number of hours (lecture, lab, contact)	A	A	A		A			A	A
6.	Course number within the hundred	A	A	I		I			I	I
7.	Course number beyond the hundred	A	A	A		A			A	A
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	A
11.	Cross list with another department: U or G level	A	A	A		A			A	A
12.	Department of record	A	A	A		A			A	A
13.	Open or close a course	A	A	A		A			A	A
14.	New course — See website for application and process. This change includes combining or splitting a course(s).	A	A	A		A			A	A

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.

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Change to a Degree Plan		COUNCIL ³							Provost	Faculty	President	Board of Trustees
		Dept./School	College Academic	Deans	TEC	UGEC	UUAC	GRAD				
1.	University Requirements — Change in approved course content ⁶	A	A	A		A			A	--	A	--
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	--

Provost-Proposed Change		COUNCIL ³							Provost	Department	Dean	TEC	UUAC	Graduate	Faculty	President	Board of Trustees
1.	Major/Graduate Program — Discontinue (proposed by the Provost)	A	R	R		A									A	A	I
2.	Minor — Discontinue (proposed by the Provost)	A	R	R		A									--	A	--
3.	Degree — Discontinue (proposed by the Provost)	A	R	R		A									A	A	I

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COUNCIL ³										
	Change to the Catalog Information	Dept./School	College Academic	Deans	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
5.	Other academic policy changes	--	--	--	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.

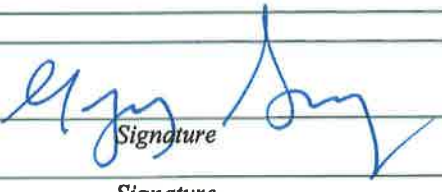
⁷ The UUAC approved the clarification that "general requirements for graduation" means the enumerated items in the "General Requirements for Bachelor's Degrees" section of the catalog.

Revised 3-8-17

Curriculum/Catalog Changes Signature Page

Department/School Chair(s)	
 <i>Signature</i>	12/30/18 <i>Approval date</i>
<i>Signature</i>	<i>Approval date</i>

College Academic Council(s)	
 <i>Signature</i>	12-7-2018 <i>Approval date</i>
<i>Signature</i>	<i>Approval date</i>

Dean(s)	
 <i>Signature</i>	12/12/18 <i>Approval date</i>
<i>Signature</i>	<i>Approval date</i>

Teacher Education Council	
<i>Chair's signature</i>	<i>Approval date</i>

General Education Council	
<i>Chair's signature</i>	<i>Approval date</i>

Undergraduate Academic Council	
<i>Chair's signature</i>	<i>Approval date</i>

Graduate Council	
<i>Chair's signature</i>	<i>Approval date</i>

Provost	
<i>Signature</i>	<i>Approval date</i>

Faculty	
<i>Chair of faculty senate</i>	<i>Approval date</i>

President	
<i>Signature</i>	<i>Approval date</i>

Application for a New Course v10.6

Course ID <i>Subject and Number</i>	ENGR 221
Date APPROVED	
Date DENIED	

I. Systems and Catalog Information Complete each item.

1	Course Developer	Robert Brown
2	Course Teacher	Robert Brown
3	Course Title	Statics and Dynamics
4	Course Abbreviation (if title is over 30 characters)	
5	College	College of Arts and Sciences
6	Department	Engineering and Physics
7	Number of Credit Hours	4
8a.	Number of contact hours - lecture	4
8b.	Number of contact hours – lab/activity	0
9	Is the course for a fixed or variable number of credit hours?	Fixed
10	Explanation for variable credit	N/A
11	Is the course repeatable for additional credit?	No
12	Maximum total number of credit hours a student can earn for this course	4
13	What type of course is this? (Select one. Please see Schedule Type definitions above.)	☒ Traditional lecture ☐ Traditional lab ☐ Traditional lecture/lab ☐ Experiential Learning ☐ Seminar ☐ Studio ☐ Thesis ☐ Dissertation

14	Instructor Workload	4 Hours
15	Grade Mode (check all appropriate):	☒ Standard ☐ Credit/No Credit (undergrad only)
16	Maximum Enrollment	18
17	Catalog Description (50 words or less)	A study of composition and resolution of forces, equilibrium of force systems, friction, forces acting on and in trusses and frames, centroids, and moments of inertia. Study of the dynamics of particles and rigid bodies, including the governing force-mass-acceleration, work-energy, and impulse-momentum relationships for one- and two-dimensional cases.
18	List any prerequisites (course/s, test scores, class standing, major, etc.)	MATH 185, PHYS 220 (or simultaneous enrollment)
19	List any co-requisites	Credit for or concurrent enrollment in PHYS 220
20	If the course is cross listed, specify the Course ID(s); MUST have signature in Section V from all Department Chairs	N/A
21	Does this course have any special student costs?	☒ No ☐ Yes (If yes, must attach a <u>completed</u> "Request to Add or Change Course Fees" form. Describe in section IV-F.)
22a	How frequently will the course be offered in the Fall ? All, even or odd years?	All
22b	How frequently will the course be offered in the Spring ? All, even or odd years?	None
22c	How frequently will the course be offered in the Summer ? All, even or odd years?	None
23	First semester this course will be offered <i>New courses may not be taught under their approved course ID until they appear in the catalog, therefore, no earlier than the coming fall.</i>	Fall 2019

24	List course/s that should be deleted, (Also, include the last semester for course/s being deleted) <i>A course cannot be deleted when it is a requirement in a degree plan in any department.</i>	ENGR 220, ENGR 222; To be deleted after Spring 2023
25	Is this course required for a degree/s? <i>If "Yes," attach a revised degree plan(s) reflecting the placement of the new course.</i>	☐ No ☒ Yes
26	Should the addition of this course be retroactively applied to the degree plan it supports?	☒ No ☐ Yes Explanation: This is a direct replacement for ENGR 220 and 222. They should be treated as equivalent for degree plan purposes.
27	Has this course been offered as a Special Topics course?	☒ No ☐ Yes <i>If "Yes," specify the Course ID and enrollment for each term it was taught.</i> <i>(Note: New courses are NOT required to be taught as Special Topics courses prior to being approved. However, a course may be taught once as Special Topics before it is proposed. See the Course Descriptions section of the Catalog for details.)</i>
28	List any courses in which the content overlaps the proposed course. (Course ID and Name) <i>Attach a statement from the instructor/dept chair of the existing course justifying the new offering in Section IV-D.</i>	ENGR 220 -- Engineering Mechanics: Statics ENGR 222 -- Engineering Mechanics: Dynamics

II. Curriculum

1	Degree Plan Explanation of how this course affects degree requirements.	This course will replace two other courses (ENGR 220 and 222). Students will be required to complete this combined course rather than the two separate courses.
2	Justification State the justification for adding this course to the current curriculum. Represent the need.	Based upon recent (Fall '17 and Spring '18) feedback from the ACU Engineering Industrial Advisory Board, ACU admissions, recent ('17 and '18) senior exit surveys, and the American Society of Engineering Educators, additional depth in engineering disciplines is needed within our degree plan to increase competitiveness of ACU graduates in the job market. In the case of Statics and Dynamics, we are reducing the total hour requirement to make room for hours in elective depth courses. The combination of the courses is common at other institutions. The combining requires that some topics not be covered. The topics that are no longer covered are specific to certain disciplines and are covered later in advanced courses. as each concentration requires.

III. Course Design

1. Audience and Course Goal

1	Describe the intended audience, including prerequisite skills.	This course is required for all students pursuing a BSE. It is intended primarily for Sophomores in the program. Students should have a firm grasp of algebraic manipulation of equations and of vector addition. Additionally, exposure to differentiation and integration is expected, though mastery is not assumed.
2	State the overarching course goal(s) in performance terms.	Students who successfully complete Statics and Dynamics should have established an understanding of forces for stationary and moving objects, the relationship between forces, work, and energy, and the concept of conservation of momentum.

2. Competencies and Measurements

	Competency	Measurement
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (ABET SO 1)	Exams and quizzes
2	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 (ABET SO 2)	Design Project

3. Text and Resources

“Engineering Mechanics: Statics & Dynamics” by Russell C. Hibbeler

Publisher: Pearson

Print ISBN: 9780133915426, 0133915425

eText ISBN: 9780133951851, 0133951855

Edition: 14th

Copyright year: 2016

IV. Supporting Documentation

Supporting documents must accompany proposal prior to preliminary approval by chair and dean.

1	Library — Submit new course application and syllabus to the Dean of the Library. Consult with the director and establish a deadline for completion of the library report. Attach the signed copy of the Library report.
2	Instructional Design — The application and syllabus must be reviewed by the Adams Center. Attach a copy of the Adams Center Review Letter.
3	Content Overlap — Include one document for each course you listed in Section I-I. Attach statement from Instructor/dept chair of existing course justifying the new offering.
4	Departmental Resources — List the resources that support the course and are available only through the department, if applicable. Attach the list of the holdings and the location/s.
5	Resources — List resources (other than library or departmental resources) that are needed to support this course (computers, lab equipment, other technology, etc.). Attach a complete list of all items and indicate possible sources or estimated cost of each. List the sources of any needed funds.
6	Expenses — List additional expenses needed to implement this course (full-time or part-time faculty, graduate or lab assistants, student employees, travel, special student costs, room renovation, storage facility, etc.). Attach a complete list of all items, the estimated cost of each and the source of the funds.
7	Justification — Attach all documents referred to in Section II-2
8	Syllabus — Attach the syllabus for the course based upon the anticipated first-semester offering.
9	Provide documentation for all additional attachments here

V. Preliminary Approvals

All supporting documentation has been assembled and attached to this application. I believe this course is ready to be presented to appropriate councils. We have a plan to fund this new course.

Course Number and Name ENGR 221

Primary Department


Department Chair

10/30/18
Date

Dean of the College

Date

Cross-listing Department *Add more lines if multiple departments are cross-listing*

Department Chair

Date

Dean of the College

Date

Cross-listing Department *Add more lines if multiple departments are cross-listing*

Department Chair

Date

Dean of the College

Date

VI. Actions *Place all actions on one page.*

Course ID: _____

Course Title: _____

1. College Academic Council: (for all courses)

Note: Insert additional lines for College Academic Council action for each college involved in cross-listed courses.

Approved _____ Denied _____
College Dean or Director Date

Approved _____ Denied _____
College Dean or Director Date

2. Graduate Council: (for graduate level courses)

Approved _____ Denied _____
Dean of Graduate School Date

3. Teacher Education Council: (when applicable)

Approved _____ Denied _____
TEC Chair Date

4. University General Education Council: (when applicable)

Approved _____ Denied _____
Provost's designee Date

5. University Undergraduate Academic Council: (*undergraduate level courses*)

Approved _____ Denied _____
Vice Provost Date

6. Academic Provost: (for all courses)

Approved _____ Denied _____
Provost Date

7. President of the University: (for all courses)

Approved _____ Denied _____
President Date

Attach notes, comments, or conditions from appropriate councils:

07/01/2016

Dr. Robert Brown
robert.b@acu.edu
OSC 123C

Re: Review of ENGR 221: Statics and Dynamics

Dear Dr. Brown,

Thank you for the submission of ENGR 221: Statics and Dynamics. I reviewed the syllabus based on the ACU Syllabus Guidelines. Please check the attached list, which indicates whether items have been addressed.

In addition, I also reviewed the syllabus from an instructional design perspective and here are changes that I suggest you make:

- Be sure to include the course calendar in the syllabus prior to distributing to students
- Title IX is a recommended syllabus piece
- It appears you're utilizing specifications grading for this course. The grading scale is a bit unclear. Do those who want to receive an A or B need to complete the exams and quizzes or just the projects? Do those seeking a C or D need to do the projects, too? How will the professor's satisfaction be defined? Rubric? Other?

This letter is not meant to be a final approval in the course application process. Instead it is intended as a reference which will be read by your department chair and members of the council, who may also have questions or comments of their own. We would appreciate it if you could modify the syllabus items based on our suggestions, or prepare to justify keeping the items as they are.

We would like to thank you for allowing the Adams Center team to review your course application. The instructional design team would love to work with you on your syllabus, as well as the design, development or revision of this and other courses. If there is anything else we can do to help you, please feel free to let me know.

Sincerely yours,

ABILENE CHRISTIAN UNIVERSITY
LIBRARY

M E M O R A N D U M

DATE: 22:03
TO: Robert Brown
FROM: Mark McCallon, Associate Dean for Library Services
RE: New Course Proposal, ENGR 221 – Statics and Dynamics

The library has examined the course application and syllabus and is able to support the proposed course. Please contact Erica Pye (expl0a@acu.edu) , Librarian Liaison to the Department of Engineering and Physics, if additional library resources are needed for the course. Thank you for letting us review the course proposal.

Statics and Dynamics (ENGR 221)

Fall 2019 - MW 9:00-10:00, F 9:00-11:00 - OSC B45 - 4 Credit Hours

Instructor: Assistant Professor Robert Brown

Email: robert.b@acu.edu

Office: OSC 123C

Phone: (918) 260-9772 (cell)

Office Hours: MW 9:00-11:00 AM, TR 3:00-4:30 PM (or by appointment)

Text: "Engineering Mechanics: Statics & Dynamics" by Russell C. Hibbeler

Publisher: Pearson

Print ISBN: 9780133915426, 0133915425

eText ISBN: 9780133951851, 0133951855

Edition: 14th

Copyright year: 2016

Course Catalog Description: A study of composition and resolution of forces, equilibrium of force systems, friction, forces acting on and in trusses and frames, centroids, and moments of inertia. Study of the dynamics of particles and rigid bodies, including the governing force-mass-acceleration, work-energy, and impulse-momentum relationships for one- and two-dimensional cases.

Prerequisite: MATH 185

Corequisite: Credit for or concurrent enrollment in PHYS 220

Intended Audience: This course is required for all students pursuing a BSE. It is intended primarily for Sophomores in the program.

Class Structure:

The course will consist of four modules:

1. Vector Algebra and Force Equilibrium (4 weeks)
 - a. Force Vectors
 - b. Equilibrium of a Particle
 - c. Equilibrium of a Rigid Body
2. Trusses and Frames (4 weeks)
 - a. Structural Analysis
 - b. Internal Forces
 - c. Friction
3. Dynamics of Particles (4 weeks)
 - a. Kinematics of a Particle
 - b. Force and Acceleration of a Particle
 - c. Work and Energy of a Particle

- d. Impulse and Momentum of a Particle
- 4. Dynamics of Rigid Bodies (3 weeks)
 - a. Mass Moment of Inertia and Centroids
 - b. Planar Kinematics of a Rigid Body
 - c. Force and Acceleration of a Rigid Body

Each module will consist of an exam, quizzes, and homework. Additionally, there will be a design project in module two and a computational project in project four.

Grading:

- A - All "C" work and complete both of the projects to professor satisfaction
- B - All "C" work and complete one of the two projects to professor satisfaction
- C - Score 70% or higher on exams and quizzes for all four modules
- D - Score 70% or higher on exams and quizzes for at least two of four modules
- F - Fail to achieve "D" level work

Classroom Policies:

Students are expected to be in class on time and participate by taking notes, asking questions, and working through problems during class time. Attendance is required to receive credit for homework submissions, quizzes, and exams, and tardiness will be counted as an absence if a student is more than 10 minutes late.

Learning Objectives Addressed In this Course:**ABET SO 1**

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- Assessed through exams and quizzes

ABET SO 2

- 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
- Assessed through truss/frame project

Academic Integrity

Students or groups of students are expected to submit work that is their own.

Academic integrity is defined as academic work completed as assigned for each class by the individual or group responsible for the work. Violations of academic integrity and other forms of cheating involve the intention to deceive, mislead, or misrepresent and therefore, are a form of lying. Such actions are contrary to behavioral norms that flow from the nature of God. Academic misconduct includes, but is not limited to, the following: 1) Failing to give credit to sources used in a work in an attempt to present the work as one's own, 2) Submitting papers or projects obtained from another source (e.g., research service or club paper file) as one's own, 3) Falsifying information orally or in writing, and 4) Receiving, giving, or using unauthorized aid on an examination or quiz. Academic misconduct may result in, but is not limited to, a zero on the assignment and/or an F in the course. Additionally, the department chair, Dean of the College of Arts and Sciences, and the Dean of Student Life will be notified. See the full university policy, including how to appeal a decision, by following this link: <http://www.acu.edu/academics/provost/policies/index.html>.

University ADA Compliance Statement

Abilene Christian University is dedicated to removing barriers and opening access for students with disabilities in compliance with ADA and Section 504 of the Rehabilitation Act. The Alpha Scholars Program facilitates disability accommodations in cooperation with instructors. In order to receive accommodations, you must be registered with Alpha Scholars Program, and you must complete a specific request for each class in which you need accommodations. If you have a documented disability and wish to discuss academic accommodations, please call our office directly at 325-674-2667.

The mission of ACU: to educate students for Christian service and leadership throughout the world.

The mission of the College of Arts and Sciences: to educate students for worldwide Christian service and leadership through programs of study and other learning experiences that blend a liberal arts education with professional and career education.

The mission of the Engineering and Physics Department:

The ACU engineering program strongly supports the university's mission of educating students for Christian service and leadership throughout the world. In support of this mission, ACU engineering graduates will attain:

- A deep and broad understanding of engineering principles and practices as evidenced by professional employment, continued professional development and graduate study in engineering or other professional fields.
- An extensive knowledge of the innovative design processes unique to engineering professionals, as demonstrated by using critical thinking skills in contribution to scientific and technical literature, patents and intellectual property, professional societies, and creative designs.
- A thorough understanding of Christian service and leadership as shown in commitments to professionalism, ethics, and service and leadership within the engineering profession, church and society.

Christian Perspective

As a Christian engineer, I believe you can best glorify God by excelling in your chosen profession, and doing so morally and ethically. The foundation of this excellence is technical proficiency, without which moral and ethical concerns cannot be addressed. This course is intended to provide you with technical skills required for a moral and ethical engineer.

Title IX Compliance Statement

"As a Christian community, Abilene Christian University has committed itself, unequivocally, to ensuring a working and learning environment in which the dignity of every individual is respected. Harassment is defined as unwelcome behavior or conduct based on sex, religion, race, age, color, national origin, veteran's status, disability, or any other characteristic protected by law when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, education, or participation in University programs or activities, (2) submission to, or rejection of, such conduct by an individual is used as the basis for a decision affecting an individual's employment, education, or participation in University programs or activities, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive environment for work, education, or participation in a University program or activity. See the full university policy by following [this link](#).