

COURSE CHANGE FORM

Complete 1a – 1f & 2a – 2c. Fill out the remainder of the form as applicable for items being changed.

1. General Information.

- a. Submitted by the College of: Engineering Today's Date: 2/23/10
- b. Department/Division: Mechanical
- c. Is there a change in "ownership" of the course? YES NO
If YES, what college/department will offer the course instead? _____
- d. What type of change is being proposed? Major Minor¹ (place cursor here for minor change definition)
- e. Contact Person Name: Tim Wu Email: wu@enr.uky.edu Phone: 7-6336x80644
- f. Requested Effective Date: Semester Following Approval OR Specific Term²: Fall 2010

2. Designation and Description of Proposed Course.

- a. Current Prefix and Number: ME 101 Proposed Prefix & Number: ME 101
- b. Full Title: Introduction to Mechanical Engineering Proposed Title: Introduction to Mechanical Engineering
- c. Current Transcript Title (if full title is more than 40 characters): Intro to ME
- c. Proposed Transcript Title (if full title is more than 40 characters): Intro to ME
- d. Current Cross-listing: N/A OR Currently³ Cross-listed with (Prefix & Number): _____
Proposed – ADD³ Cross-listing (Prefix & Number): _____
Proposed – REMOVE^{3,4} Cross-listing (Prefix & Number): _____
- e. Courses must be described by **at least one** of the meeting patterns below. Include number of actual contact hours⁵ for each meeting pattern type.
- | | | | | | |
|-----------|------------------|----------------------------------|-------------------------------------|------------------|--------------------|
| Current: | <u>2</u> Lecture | <u>3</u> Laboratory ⁵ | _____ Recitation | _____ Discussion | _____ Indep. Study |
| | _____ Clinical | _____ Colloquium | _____ Practicum | _____ Research | _____ Residency |
| | _____ Seminar | _____ Studio | _____ Other – Please explain: _____ | | |
| Proposed: | <u>2</u> Lecture | _____ Laboratory | <u>1</u> Recitation | _____ Discussion | _____ Indep. Study |
| | _____ Clinical | _____ Colloquium | _____ Practicum | _____ Research | _____ Residency |
| | _____ Seminar | _____ Studio | _____ Other – Please explain: _____ | | |
- f. Current Grading System: Letter (A, B, C, etc.) Pass/Fail
Proposed Grading System: Letter (A, B, C, etc.) Pass/Fail
- g. Current number of credit hours: 3.0 Proposed number of credit hours: 3.0

¹ See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair.* If Chair deems the change as "not minor," the form will be sent to appropriate academic Council for normal processing and contact person is informed.

² Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

³ Signature of the chair of the cross-listing department is required on the Signature Routing Log.

⁴ Removing a cross-listing does not drop the other course – it merely unlinks the two courses.

⁵ Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

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- h. **Currently, is this course repeatable for additional credit?** YES NO
- Proposed to be repeatable for additional credit?* YES NO
- If YES: Maximum number of credit hours: _____
- If YES: Will this course allow multiple registrations during the same semester? YES NO

- i. **Current Course Description for Bulletin:** This course introduces the engineering profession and the skills and expectations required for success. Engineering applications of calculus are also presented. Prereq or Concur: MA 113
- Proposed Course Description for Bulletin:* This course introduces the Mechanical Engineering profession including the skills and expectations required for success. Engineering applications of calculus are also presented. Prereq or Concur: MA 113

- j. **Current Prerequisites, if any:** Prereq or concur: MA 113
- Proposed Prerequisites, if any:* Prereq or concur: MA 113

- k. **Current Distance Learning(DL) Status:** N/A Already approved for DL* Please Add⁶ Please Drop
- *If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box) that the proposed changes do not affect DL delivery.

- l. **Current Supplementary Teaching Component, if any:** Community-Based Experience Service Learning Both
- Proposed Supplementary Teaching Component:* Community-Based Experience Service Learning Both

3. **Currently, is this course taught off campus?** YES NO
- Proposed to be taught off campus?* YES NO

4. **Are significant changes in content/teaching objectives of the course being proposed?** YES NO
- If YES, explain and offer brief rationale:
- Increased emphasis on teamwork, creative design and writing skills.

5. **Course Relationship to Program(s).**

- a. **Are there other depts and/or pgms that could be affected by the proposed change?** YES NO
- If YES, identify the depts. and/or pgms: _____
- b. **Will modifying this course result in a new requirement⁷ for ANY program?** YES NO
- If YES⁷, list the program(s) here: _____

6. **Information to be Placed on Syllabus.**

- a. Check box if changed to 400G or 500. If changed to 400G- or 500-level course you must send in a syllabus and *you must include the differentiation* between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)

⁶ You must *also* submit the Distance Learning Form in order for the course to be considered for DL delivery.

⁷ In order to change a program, a program change form must also be submitted.

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Signature Routing Log

General Information:

Course Prefix and Number: ME 101

Proposal Contact Person Name: Tim Wu

Phone: 7-6336x80644

Email: wu@engr.uky.edu

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
Undergraduate Studies Committee	1/27/10	Tim Wu / 7-6336x80644 / wu@engr.uky.edu	
ME Faculty	3/3/10	L. Scott Stephens / 7-6336x80649 / stephens@engr.uky.edu	
<i>College of Engineering faculty</i>	<i>11/16/10</i>	<i>Richard Swelgard 178827 / rswelgar@engr.uky.edu</i>	<i>Richard Swelgard</i>
		/ /	
		/ /	

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision ⁸
Undergraduate Council	2/15/2011		
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

⁸ Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

ME 101: Introduction to Mechanical Engineering

Introduction

This course introduces the engineering profession and the skills and expectations required for success. It is designed to provide "hands-on" engineering experience in the first year of the engineering curriculum. This course should motivate students to continue their mechanical engineering education, and supply mechanical engineering experience on which to base a future career. The course serves as an introduction to the mechanical engineering profession, engineering design, technical fields in engineering (statics, dynamics, solid mechanics, fluid mechanics, heat transfer, etc.), teamwork, engineering ethics, safety, and engineering measurements. A cornerstone design project during the semester will incorporate these topics, and a final team presentation of the design is required.

Prerequisites

Students should have taken or be taking MA-113 concurrently. If you drop MA-113, you need to obtain special permission to continue in ME-101.

Instructor

Tom Henninger, Ph.D.
Office: 413 RMB
Phone: 257-6262 ext.456
E-mail: tom.h@uky.edu
Office hours: by appointment (e-mail me to set up a time)

Teaching Assistant

Franklin DiBartolomeo and Kassy Lum

Textbooks/Course Materials

An Introduction to Mechanical Engineering by Jonathan Wickert, 2nd ed.
ISBN 0-534-55297-8

All other course materials will be handed out in class or posted on the course website.

Class Times

MWF 8-8:50 RGAN 202

E-Mail

It is imperative for you to have an engr account by the end of the 2nd week of class. Important information about due dates, project hints, etc. may be provided to you via e-mail.

Coursework, Structure, and Grading Policies

General: Many of the projects in class will be team based and you are expected to contribute equally to the project requirements. However, while engineering problem solving and design often benefits from the interchange which accompanies a group effort, the maximum learning benefit for the student typically results from a careful balance between serious individual effort and group consultation. With this in mind, students are strongly discouraged from doing their homework assignments solely in a group framework. Penalties for cheating and plagiarism will be applied as published in the *Students Rights and Responsibilities Code of the University*.

Attendance: Role will not be taken during lectures but attendance is highly recommended and laboratory attendance is mandatory.

Homework: Homework should be written in an organized fashion on engineering paper (maximum of two problems per page). For each problem include:

- ✓ The problem statement in your own words
- ✓ A list of what is given and what you are trying to find
- ✓ A detailed solution

Note: It is assumed that you are responsible and will not wait till the last minute to complete assignments. You should plan ahead to complete assignments on time. Failure to submit the assignment on time (at the beginning of class) due to computer or printer malfunction is not an acceptable excuse. E-mail submittal is not acceptable.

Grading:

Design	100 pts
Homework/Quiz	100 pts
Engineering Measurements/Analysis	<u>100 pts</u>
Total:	300 pts

Grade Assignment:

270 – 300 points	A (100%-90%)
240 – 269 points	B (89%-80%)
210 – 239 points	C (79%-70%)
180 – 209 points	D (69%-60%)
Below 180	E (59%-0%)

- The **Design** grade consists of two Design Demonstrations (DD) worth 20 points and a major design project worth 80 points (this includes the design presentation). **Note that the major design project will be due during the week of XXXXX (Dead Week).** No extensions will be granted.
- The **Engineering Measurements/Analysis** grade will consist of **Measurement Demonstrations (MD)** and **Computer Demonstrations (CD)** assignments. Demonstrations will typically be conducted on **Fridays**, see expected course schedule for detailed list of lectures and demonstrations.
- The **Homework/Quiz** grade will consist of several homework assignments and quizzes distributed through the semester.
- If you believe that the grading does not reflect your performance, you may submit that assignment to be re-graded. However, the entire assignment will be re-graded in that case.

Course Outcomes

At the conclusion of ME 101, the student should be able to:

1. Be familiar with career opportunities in mechanical engineering.
2. Recognize the importance of math, physics, and chemistry in engineering.
3. Apply engineering design concepts to real problems.
4. Solve force and moment equilibrium problems
5. Interact with a team to accomplish a design project.
6. Demonstrate proficiency with the UK campus computing environment.
7. Use a spreadsheet to perform engineering calculations, and present data in a professional manner.
8. Perform unit conversions and check dimensional consistency.
9. Exhibit a professional attitude towards education and career.

Expected Course Schedule

Note: This is a **tentative** schedule and may change at any time at the sole discretion of the instructor.

Class #	Date	Day	Topic
1			Course Intro & Ch 1: Intro to ME Profession
2			Ch 1: ME Profession (cont.); Ethics/Integrity
3			Design/Teamwork
4			DD-1: Design/Teamwork Demonstration
5			Resume writing/Co-op
6			Intro to Engr Statistics
7			CD-1: Intro to Excel, Data Analysis
8			Ch 2: Unit Systems
9			Dimensional and Mass Measurements
10			MD-1: Measurement, Volume, & Density
11			Ch 2: Unit Systems - examples
12			Electric Circuits
13			MD-2: Electric Circuits
14			Quiz #1 - covers class #1-#12
15			Ch 3: Forces and Moments
16			CD-2: Excel cont. - Data and Graphing
17			Ch 3: Forces and Moments - examples
18			Spring Forces, Vectors, & FBD
19			MD-3: Spring Forces, Vectors, & FBD
20			Quiz #2 - (Ch 3) & Design Project/Group Assignment
21			Ch 4: Material & Stresses
22			Ch 4: Material & Stresses
23			Ch 4: Material & Stresses
24			MD-4: Beam Vibrations & Moment of Inertia
25			Ch 5: Fluids
n/a			Spring Break - No class
26			Ch 5: Fluids - examples
27			Fluids - Stokes Law & Viscosity
28			MD-5: Fluid Mechanics
29			Ch 8: Mechanical Design
30			Ch 8: Mechanical Design
31			DD-2: Mechanical Design - Case Study

(continued on next page)

Note: This is a ***tentative*** schedule and may change at any time at the sole discretion of the instructor.

Class #	Date	Day	Topic
32			Ch 6: Thermal & Energy Systems
33			Ch 6: Thermal & Energy Systems - examples
34			Ch 7: Motion & Power
35			Ch 7: Motion & Power - examples
36			Quiz #3 - classes #21-#33
37			Work on Design Project
38			Work on Design Project
39			Design Project Competition
40			Design Project Competition
41			Design Project Presentations
42			Design Project Presentations
43			Design Project Presentations