Curriculum Course Request WES Change Course ME 2615 - A-2018-ME-121; effective term: 202040

Koorosh Naghshineh

Tue 12/18/2018 4:49 PM

To: Raja G Aravamuthan <raja.aravamuthan@wmich.edu>; Said M Abubakr <said.abubakr@wmich.edu>
Cc: Holly Blanks <holly.blanks@wmich.edu>

2 attachments (244 KB)
ME2615_WES_fall20 (2).pdf; ME2615_WES_assess (2).pdf;

Please verify your data for New Curriculum Course Request for department: ME; college: A.
Go to the following URL to complete your worklist items: https://bwfp31.cc.wmich.edu:7102/wfbprod

Date of request: 25-NOV-2018

Request ID: A-2018-ME-121

College: A

Department: ME

Initiator name: Judah Ari-Gur

Initiator email: judah.ari-gur@wmich.edu

Proposed effective term: 202040

Does course need General Education approval?: Y

Will course be used in teacher education?: N

If 5000 level course, prerequisites apply to: U

Proposed course data:
WES Change Course ME 2615
Specific Course Change type selected: WMU Essential Studies - Level 1: Foundations

1. Existing course prefix and number:
ME 2615

2. Level 1: Foundations
Indicate which course category the course should be placed in:
Oral and Digital Communication

3. How are you going to address this in your course?
https://outlook.office.com/owa/?realm=WMICH.EDU&exsvurl=1&ll-cc=1033&modurl=0
J. Effects on enrolled students: are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer only, provide a rationale. This is an existing required course in our program. No conflicts. No scheduling changes.

K. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?
N/A

L. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)
The course has been offered recently in 2 sections every Fall and Spring. It is offered also in the summer, if needed. A typical regular semester section includes about 50 students. It is not offered online.

M. With the change from General Education to WMU Essential Studies, this question is no longer used.

For courses requesting approval as a WMU Essential Studies course, a syllabus identifying the student learning outcomes and an action plan for assessing the student learning outcomes must be attached in the Banner Workflow system.
Not Applicable

N. (Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, include detail on necessary changes to transfer articulation from Michigan community college courses. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.
No effect.

O. Current catalog copy:
ME 2615 Introduction to Mechanical Engineering
Introduction to mechanical engineering systems, the design process and their connections to basic ideas of physics. The lectures will focus on visual experiences and demonstrations of mechanical systems, with the appropriately related physics explanations and mathematical relationships. The students will be involved in competitive design projects, experiencing teamwork, design process, testing and communication.
Prerequisites: MATH 1220 or MATH 1700 (either may be taken concurrently); with a grade of 'C' or better in all prerequisites. 3 hours

P. Proposed catalog copy:
ME 2615 Introduction to Mechanical Engineering
Introduction to mechanical engineering systems, the design process and their connections to basic ideas of physics. The lectures will focus on visual experiences and demonstrations of mechanical systems, with the appropriately related physics explanations and mathematical relationships. The students will be involved in competitive design projects, experiencing teamwork, design process, testing and communication. This course meets the student learning outcomes in the WMU Essential Studies Level 1 -- Communication (Oral and Digital Communications)
Prerequisites: MATH 1220 or MATH 1700 (either may be taken concurrently); with a grade of 'C' or better in all prerequisites. 3 hours

Department Curriculum Chair approver: Kapseong Ro

Department Curriculum Chair comment:

https://outlook.office.com/owa/?realm=WMICH.EDU&exsvurl=1&ll-cc=1033&modurl=0
COURSE OUTLINE

Instructor: Dr. Judah Ari-Gur, Room F-246, E-mail: judah.ari-gur@wmich.edu, Tel.: 276-3419
Office Hours: (TBD)
Corequisites: MATH 1700 or MATH 1220.

Catalog Description:
Introduction to mechanical engineering systems, the design process and their connections to basic ideas of physics. The lectures will focus on visual experiences and demonstrations of mechanical systems, with the appropriately related physics explanations and mathematical relationships. The students will be involved in competitive design projects, experiencing teamwork, design process, testing and communication. This course meets the student learning outcomes in the WMU Essential Studies Level I – Communications (Oral and Digital Communications).

Learning Objectives:
Study the relationships between the fundamental principles of mathematics and sciences and the mechanical engineering profession.
Practice problem solving in the various areas of mechanical engineering.
Engage in design activities.
Engage in engineering team work.
Demonstrate and apply information literacy. (WMU Essential Studies SLO)
Practice technical communication skills.
Demonstrate effective and appropriate oral and digital communication abilities. (WMU Essential Studies SLO)
Prepare for the mechanical engineering program at WMU.
Instill good study habits.

Topics
Introduction (scope and tools of profession)
Equilibrium and its failures
Materials and their failures
Structures and their failures
Fluid flow and its forms
Heating and cooling
Noise and vibration
Engines
Power sources and transmission
Manufacturing processes and plants
Engineering disasters and ethics
The design process
Sources of information
Project presentations and technical reports

Major Course Requirements:
Data Search Assignment – Each student will be assigned a different subject for literature search. The subjects may include a mechanical system, a mechanical component, a manufacturing process, a specific material, an engineering idea, etc. The search must include information from different sources, e.g., patents, books, manufacturers, customer information, popular magazines, etc. The student will then write a report (2-4 pages) about usage, applicability, challenges and future potential. The report must include also the sources of information. (WES Information Literacy outcome).
Additional information

1. For the quizzes and exams you are allowed to use only the calculators which are approved for use in the national Fundamentals of Engineering exam. See: http://ncees.org/exams/calculator-policy/ (This will help you to prepare for the eventual licensed Professional Engineer title that you may aspire to acquire. Read about it: http://ncees.org/audience-landing-pages/students/)

2. Quiz dates are not announced in advance. It is your responsibility to always have an allowed calculator with you in class.

3. There are no makeup dates for quizzes.

4. The use of a cell phone in the classroom is not allowed.

5. The use of a computer, tablet or any equivalent device in the classroom is not allowed.

6. It is your responsibility to attend class, take careful notes and follow instructions. If anything is not clear, ask.

7. If you send me an e-mail with a question, you will get the answer through e-mail. If I decide that the answer may benefit the entire class, I will send the question and answer to the entire class. In that case, I will modify the e-mail to ensure that I protect your identity.

8. **Homework** is a written communication between you and the instructor. Please make sure that it is neat, clear, readable and logically outlined. Write only on one side of the paper, with not more than 2 problems per page. Draw a **bold** horizontal line across the page to separate between problems. Staple all the pages together in the correct order. All the stapled papers must be of the same type. Write your name clearly, using **UPPER CASE** letters, on the front page. If these instructions are violated, the homework may be rejected, including a grade of zero. (The format for the solution of homework problems will be detailed and explained in class.)

9. Homework is due at the beginning of the class. Please place it on the instructor’s table.

10. When you send me an e-mail, please start the subject line with ME2615. It will draw my attention and help me to prioritize it.

**Academic conduct**

Students are responsible for making themselves aware of and understanding the University policies and procedures that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. The academic policies addressing Student Rights and Responsibilities can be found in the Undergraduate Catalog at http://catalog.wmich.edu/content.php?catoid=30&navoid=1283. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s) and if you believe you are not responsible, you will have the opportunity for a hearing. You should consult with your instructor if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.
# Oral and Digital Communications

<table>
<thead>
<tr>
<th>WMU Essential Studies Student Learning Outcome</th>
<th>Assignments and/or Learning Activities that meet the criteria within the rubric that is aligned with the SLO</th>
<th>When the SLO assessment will take place</th>
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</thead>
<tbody>
<tr>
<td>X Demonstrate effective and appropriate oral and digital communications</td>
<td>Project #1 includes team work, generation of test data, evidence based digitized data processing and graphical presentations, written and oral reports to different audiences, software based presentations, including a required inclusion of video from the tests. Project #2 includes team work, focused message, digitized oral presentation supported by physical evidence of product demonstration.</td>
<td>Materials are covered in weeks 2-5. Project #1 is assigned in week 5, due in week 8. Project #2 is assigned in week 10, due in week 14.</td>
</tr>
<tr>
<td>X Demonstrate and apply information literacy</td>
<td>Data search assignment includes locating, collecting, evaluating and summarizing in a report information about an engineering related topic. In both projects students generate, process and synthesize data and use the information to draw their own engineering conclusions.</td>
<td>Data search assignment chosen in week 3 and reported in week 5. Projects timeline as above.</td>
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Note: the primary instructor of this course will be designated as the course coordinator. When this course is offered in more than one section, the course coordinator will ensure that similar assessment activities are done in all the sections.