

Course Information

Date Submitted: 12/12/2012

Current Prefix and Number: ME - Mechanical Engineering , ME 395 INDEP WORK IN MECH ENGR

Other Course:

Proposed Prefix and Number:

What type of change is being proposed?

Major Change

Should this course be a UK Core Course? No

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OFFICE OF THE
SENATE COUNCIL**1. General Information**

a. Submitted by the College of: College of Engineering

b. Department/Division: Mechanical Engineering

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: Tingwen Wu

Email: wu@engr.uky.edu

Phone: 218-0644

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

f. Requested Effective Date

Semester Following Approval: Yes OR Effective Semester:

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: N/A

b. Full Title: INDEPENDENT WORK IN MECHANICAL ENGINEERING

Proposed Title: INDEPENDENT WORK IN MECHANICAL ENGINEERING

c. Current Transcript Title: INDEP WORK IN MECH ENGR

Proposed Transcript Title:

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

Proposed Meeting Patterns

INDEPSTUDY: 1-3 hours/week

f. Current Grading System: ABC Letter Grade Scale

Proposed Grading System: PropGradingSys

g. Current number of credit hours: 1 - 6 (variable)

Proposed number of credit hours: 1 - 3

h. Currently, is this course repeatable for additional credit? Yes

Proposed to be repeatable for additional credit? Yes

If Yes: Maximum number of credit hours: 6 towards technical electives, no maximum otherwise.

If Yes: Will this course allow multiple registrations during the same semester? Yes

2i. Current Course Description for Bulletin: Special research and problems for individual students who wish to pursue independent investigations. May be repeated to a maximum of six credits. Prereq: Consent of department chairperson via permit.

Proposed Course Description for Bulletin: Special research and problems for individual students who wish to pursue independent investigations. Variable credit: may be repeated to a maximum of six credit hours for technical electives. A final report is required. Prereq: Consent of department chairperson via permit.

2j. Current Prerequisites, if any: Prereq: Consent of department chairperson via permit.

Proposed Prerequisites, if any:

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component:

3. Currently, is this course taught off campus? Yes

Proposed to be taught off campus? Yes

If YES, enter the off campus address: Paducah

4. Are significant changes in content/student learning outcomes of the course being proposed? No

If YES, explain and offer brief rationale:

5a. Are there other depts. and/or pgms that could be affected by the proposed change? No

If YES, identify the depts. and/or pgms:

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components? NO

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|STEPHEN|L S Stephens|Dept approval for ZCOURSE_CHANGE ME 395|20121214 .

SIGNATURE|BJSTOK0|Barbara J Brandenburg|College approval for ZCOURSE_CHANGE ME 395|20130315

SIGNATURE|JMETT2|Joanie Ett-Mims|Undergrad Council approval for ZCOURSE_CHANGE ME 395|20140307

Courses	Request Tracking
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Course Change Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

[Open in full window to print or save](#)

Generate R

Attachments:

Upload File

Browse...

ID	Attachment
Delete 3180	ME_395-Syllabus1_Fall2013_Parker.doc

First 1 Last

Select saved project to retrieve...

Get New

NOTE: Start form entry by choosing the Current Prefix and Number
 (*denotes required fields)

Current Prefix and Number:	ME - Mechanical Engineering ME 395 INDEP WORK IN MECH ENGR	Proposed Prefix & Number:	
* What type of change is being proposed?		<input checked="" type="checkbox"/> Major Change <input type="checkbox"/> Major - Add Distance Learning <input type="checkbox"/> Minor - change in number within the same hundred series, ex: 799 is the same "hundred series" <input type="checkbox"/> Minor - editorial change in course title or description which doe change in content or emphasis <input type="checkbox"/> Minor - a change in prerequisite(s) which does not imply a cha course content or emphasis, or which is made necessary by the e or significant alteration of the prerequisite(s) <input type="checkbox"/> Minor - a cross listing of a course as described above	
Should this course be a UK Core Course? <input type="radio"/> Yes <input checked="" type="radio"/> No			
If YES, check the areas that apply:			
<input type="checkbox"/> Inquiry - Arts & Creativity <input type="checkbox"/> Composition & Communications - II <input type="checkbox"/> Inquiry - Humanities <input type="checkbox"/> Quantitative Foundations <input type="checkbox"/> Inquiry - Nat/Math/Phys Sci <input type="checkbox"/> Statistical Inferential Reasoning <input type="checkbox"/> Inquiry - Social Sciences <input type="checkbox"/> U.S. Citizenship, Community, Diversity <input type="checkbox"/> Composition & Communications - I <input type="checkbox"/> Global Dynamics			
1. General Information			
a.	Submitted by the College of: College of Engineering		Submission Date: 12/12/2012
b.	Department/Division: Mechanical Engineering		
c.* Is there a change in "ownership" of the course?			
<input type="radio"/> Yes <input checked="" type="radio"/> No If YES, what college/department will offer the course instead? <input type="text" value="Select..."/>			
e.* * Contact Person Name: Tingwen Wu Email: wu@enr.uky.edu Phone: 218-0644			
* Responsible Faculty ID (if different from Contact) Email: Phone:			
f.*	Requested Effective Date:	<input checked="" type="checkbox"/> Semester Following Approval	OR <input type="checkbox"/> Specific Term: ²
2. Designation and Description of Proposed Course.			
a.	Current Distance Learning(DL) Status:	<input checked="" type="radio"/> N/A <input type="radio"/> Already approved for DL* <input type="radio"/> Please Add <input type="radio"/> Please Drop	
*If already approved for DL, the Distance Learning Form must also be submitted <u>unless</u> the department affirms (by checking this box) that the proposed chang affect DL delivery.			
b.	Full Title:	INDEPENDENT WORK IN MECHANICAL ENGINEERING	Proposed Title: * INDEPENDENT WORK IN MECHANICAL ENGINEERING

c. Current Transcript Title (if full title is more than 40 characters):		INDEP WORK IN MECH ENGR			
c. Proposed Transcript Title (if full title is more than 40 characters):					
d. Current Cross-listing:	<input checked="" type="checkbox"/> N/A	OR	Currently ³ Cross-listed with (Prefix & Number):	none	
Proposed – ADD ³ 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 hours ⁵ for each meeting pattern					
Current:	Lecture	Laboratory ⁵	Recitation	Discussion	Indep. Stud:
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other Please explain:		
Proposed: *	Lecture	Laboratory ⁵	Recitation	Discussion	Indep. Stud: 1-3 hours/w
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other Please explain:		
f. Current Grading System:	ABC Letter Grade Scale				
Proposed Grading System:*	<input checked="" type="radio"/> Letter (A, B, C, etc.) <input type="radio"/> Pass/Fail <input type="radio"/> Medicine Numeric Grade (Non-medical students will receive a letter grade) <input type="radio"/> Graduate School Grade Scale				
g. Current number of credit hours:	1 - 6 (variable)	Proposed number of credit hours:*	1 - 3		
h.* Currently, is this course repeatable for additional credit?					<input checked="" type="radio"/> Yes <input type="radio"/> N
* Proposed to be repeatable for additional credit?					<input checked="" type="radio"/> Yes <input type="radio"/> N
If YES:	Maximum number of credit hours:	6 towards technical electi.			
If YES:	Will this course allow multiple registrations during the same semester?				<input checked="" type="radio"/> Yes <input type="radio"/> N
i. Current Course Description for Bulletin:	Special research and problems for individual students who wish to pursue independent investigations. May be repeated to a maximum of six credits. Prereq: Consent of department chairperson via permit.				
* Proposed Course Description for Bulletin:	Special research and problems for individual students who wish to pursue independent investigations. Variable credit: may be repeated to a maximum of six credit hours for technical electives. A final report is required. Prereq: Consent of department chairperson via permit.				
j. Current Prerequisites, if any:	Prereq: Consent of department chairperson via permit.				
* Proposed Prerequisites, if any:					

k.	Current Supplementary Teaching Component, if any:	<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both
	Proposed Supplementary Teaching Component:	<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both <input type="radio"/> No Change
3.	Currently, is this course taught off campus?	<input checked="" type="radio"/> Yes <input type="radio"/> N
*	Proposed to be taught off campus?	<input checked="" type="radio"/> Yes <input type="radio"/> N
	If YES, enter the off campus address: Paducah	
4.*	Are significant changes in content/student learning outcomes of the course being proposed?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES, explain and offer brief rationale:	
5.	Course Relationship to Program(s).	
a.*	Are there other depts and/or pgms that could be affected by the proposed change?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES, identify the depts. and/or pgms:	
b.*	Will modifying this course result in a new requirement ² for ANY program?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES ² , list the program(s) here:	
6.	Information to be Placed on Syllabus.	
a.	<input type="checkbox"/> 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 under graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading course for graduate students. (See SR 3.1.4.)

¹See 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 appropriate academic Council for normal processing and contact person is informed.

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

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

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

⁵Generally, 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 two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

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

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

Submit as New Proposal Save Current Changes

**ME 395 Fall 2013 – Independent Study Project #1 for Dillon Burkhead,
Laurie Dunning and Phua Zi Qin
(with Dr. Parker)**

Instructor: Dr. Johne' Parker
Office Address: 175 RGAN
Email: parker.johne@gmail.com
Office Phone: 218-0647
Office Hours: TBA

Course Description and Goals:

This independent study project serves three primary functions: i) an introduction to radio frequency identification (RFID) technologies*, ii) a characterization and analysis of the performance of current RFID hardware/middleware, iii) utilizing the results from (ii) to assist in the development of the next generation Laser RFID printer [and associated system solutions] and iv) a general exposure to undergraduate research. Goals (ii) and (iii), build upon work done during Fall 2011 – Summer 2013 to characterize and *analyze* the performance of current RFID hardware/middleware, as well as work performed during Spring and Summer 2013 to better understand the mechanical ability of the printer to successfully pick and transport RFID media for programming and printing. The work performed in this course is an essential part of the Phase I RFID collaborations between Lexmark and UK (Dr. Parker, Principal Investigator) in the above areas. Students in this course are expected and encouraged to be proactive and self-motivated in solving related engineering problems and identifying and exploring topics to support research goals.

Prerequisites: Engineering Standing

Tentative List of Discussion Topics (to augment Research):

1. Examination of Radio Frequency Identification (RFID) Technologies.
2. Technical and policy issues (emphasis is on technical issues, but the effect of spectrum, standards, interoperability, privacy and security of tag data on technical performance and design constraints will be discussed)
3. Passive UHF RFID tag types and designs; Reader antenna designs
4. Literature review of current knowledge
5. Operation of RFID UHF test fixture-with passive read and read-write tags
6. Experimental designs using stepper motor analogy to aid in next generation RFID laser printer design
7. Experimental investigation of RFID media picking and transport process for various tag designs and media profiles
8. Appropriate design of experiments and analysis to support the above

Learning Outcomes:

Students are expected to learn the following

1. How to perform research in emerging areas in systems/design and manufacturing, using the next generation RFID laser printer development with RFID as a case study

2. How to characterize the performance of RFID UHF read-right tags in the Lexmark printing application and the performance of RFID media during the picking/transport process
3. Appropriate design and (statistical) analysis of experiments
4. How to perform literature reviews
5. Appropriate oral and written presentations of research results

Meeting Times: **TBD** **Research testing and lab schedules are flexible;**
Regularly scheduled group meeting times (TBD); scheduling of
Lexmark training and review meetings also TBD

Excused Absence Policy:

Excused absences from class/laboratory will be given only for absences as defined by University Senate Rules V, 2.4.2.. Documentation regarding such an absence must be presented to your mentor in advance of the absence or within one week following the absence. Make-up of missed work (for excused absences) will be scheduled on a case-by-case basis by the student's mentor.

Grading Policy:

The grade for ME 395 is assigned by the Research Faculty member, in consultation with Director of Undergraduate Studies.

Grades are usually based on three aspects of a student's performance:

- (a) Fulfillment of required hours. Students are expected to spend on average 3-4 hours per week for each credit hour enrolled. Failure to complete the expected number of hours will reduce the grade.
- (b) Performance. At a minimum, students should seek to confirm their understanding of the project through discussions and readings, and should learn how to troubleshoot basic problems.
- (c) Final report. The format of the final report (written or oral) will be determined by the Research Mentor.

The faculty member will determine the exact weighting of each of these activities in the determination of your final grade. The grading scale will be determined by the faculty member, in consultation with the Director of Undergraduate studies.

Example of grading criteria and requirements:

Student will maintain a lab notebook and is expected to work with Lexmark engineers and Professor Parker on the topics listed above. Student will

- perform lab work or equivalent research (including literature reviews),
- participate in weekly group research meetings and present their findings (both in intra-group meetings and before Lexmark employees, as appropriate).

Deliverables at the end of the semester will include

- the physical lab notebook,
- electronic supporting information (i.e., a CD/DVD of laboratory experiments, data, and analysis),
- a written report and oral presentation to Professor Parker and Lexmark collaborators
- submission of results to be used in manuscripts submitted to the 2014 ASME/IEEE International Conference on Advanced Intelligent Mechatronics (or the 2014 MSEC*/NAMRC/ECM&P Conference)

Mid-term Grade :

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (<http://www.uky.edu/Registrar/AcademicCalendar.htm>)

Academic Integrity:

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability:

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.