

MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Jack Rudolph	Dr. James Gary	Dr. Keith Sylvester
Dr. Martin Stone	Dr. Huanjing Wang	Dr. John Khouryieh
Dr. Bruce Schulte	Dr. Julie Ellis	Dr. Mark Robinson
Dr. Scott Grubbs	Dr. Warren Campbell	Dr. Attila Por
Dr. Cathleen Webb	Dr. David Keeling	Dr. Keith Andrew
Dr. Hemali Rathnayake	Dr. Xingang Fan	Dr. Lou Strolger
Dr. Les Pesterfield		

FROM: Bruce Kessler, Chair

SUBJECT: Agenda for Thursday, December 6, 2012, 3:45 p.m. in COHH 4123

A. OLD BUSINESS:

- I. Consideration of the minutes of the October 11, 2012, meeting.

B. NEW BUSINESS:

Consent Items

I. Department of Engineering

1. Proposal to Suspend a Course
 - a. ME 175, University Experience – Mechanical Engineering, 2 hours
 - b. ME 285, Elements of Industrial Automation, 1 hour
 - c. ME 365, Thermal Sciences for Electrical Engineers, 3 hours
 - d. ME 440, Thermal Fluid Systems Laboratory, 2 hours
 - e. ME 445, Dynamics Systems Laboratory, 2 hours

Action Items

I. Department of Agriculture

1. Proposal to Make Multiple Revisions to a Course
 - a. AGRO 317, Plant Pathology, 3 hrs.

II. Department of Engineering

1. Proposal to Create a New Course
 - a. CE 301, Field Experience in Floodplain Management, 3 hrs.
 - b. ME 332, Fluid Mechanics Laboratory, 1 hr.
 - c. ME 333, Heat Transfer Laboratory, 1 hr.
2. Proposal to Make Multiple Revisions to a Course
 - a. ME 176, Mechanical Engineering Freshman Design, 1 hr.
3. Proposal to Revise Course Prerequisites/Corequisites
 - a. ME 180, Freshman Design II, 3 hrs.
 - b. ME 220, Engineering Thermodynamics I, 3 hrs.

- c. ME 300, Junior Design, 2 hrs.
- d. ME 330, Fluid Mechanics, 3 hrs.

4. Proposal to Revise a Program

- a. Ref. #361, Minor in Floodplain Management, 22 hrs.
- b. Ref. #543, Mechanical Engineering, 60.5 hrs.

C. INFORMATION ITEMS

I. Department of Engineering

1. Proposal to Create a Temporary Course

- a. ME 332, Fluid Mechanics Laboratory, 1 hr.

C. OTHER BUSINESS

MEMBERS PRESENT:

Dr. Martin Stone	Dr. Warren Campbell
Dr. Scott Grubbs	Dr. Xingang Fan
Dr. Rhui Zhang for Dr. Cathleen Webb	Dr. John Khouryieh
Dr. Hemali Rathnayake	Dr. Mark Robinson
Dr. Les Pesterfield	Dr. Attila Por
Dr. James Gary	Dr. Keith Andrew
Dr. Huanjing Wang	Dr. Lou Strolger

FROM: Dr. Bruce Schulte for Dr. Bruce Kessler, Chair

VISITORS: Dr. Ahmed Khalafallah and Mr. Roger Dennis

OLD BUSINESS:

Stone/Pesterfield moved approval of the minutes of the September 6, 2012, meeting. Motion passed.

NEW BUSINESS:

Consent Items

No motion made to move any items from consent agenda to action agenda. Consent agenda was accepted as presented.

Action Items

Department of Architectural and Manufacturing Sciences

Stone/Pesterfield moved approval of the proposal to revise a program, Ref. #533, Major in Construction Management. Motion passed.

Department of Agriculture

Stone/Pesterfield moved approval of the proposal to create a new minor program, Minor in Floristry. Motion passed.

OTHER BUSINESS

No other business. Meeting was adjourned until 4:05 p.m.

Proposal Date: 10/26/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Suspend a Course
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: ME 175
- 1.2 Course title: University Experience – Mechanical Engineering
- 1.3 Credit hours: 2

2. Rationale for the course suspension:

The course has been superseded by a departmental course ENGR 175, optionally taken by students who are investigating an engineering major. Students in the Mechanical Engineering major have been taking ME 176: Mechanical Engineering Freshman Design as their introductory course.

3. Effect of course suspension on programs or other departments, if known:

None, this course has not been offered for several years.

4. Proposed term for implementation: Fall 2013

5. Dates of prior committee approvals:

Engineering Department: 15 Nov. 2012

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 10/26/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Suspend a Course
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: ME 285
- 1.2 Course title: Elements of Industrial Automation
- 1.3 Credit hours: 1

2. Rationale for the course suspension:

The project component of this course has been integrated into an existing design project in ME 200. This level of topical coverage is sufficient to support the design goals of the major, rendering this course unnecessary.

3. Effect of course suspension on programs or other departments, if known:

None; this course has not been offered for several years to investigate the efficacy of the curricular change.

4. Proposed term for implementation: Fall 2013

5. Dates of prior committee approvals:

Department of Engineering	<u>15 Nov. 2012</u>
OCSE Curriculum Committee	_____
University Curriculum Committee	_____
University Senate	_____

Attachment: Course Inventory Form

Proposal Date: 10/26/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Suspend a Course
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: ME 365
- 1.2 Course title: Thermal Sciences for Electrical Engineers
- 1.3 Credit hours: 3

2. Rationale for the course suspension:

The course does not provide efficient deployment of limited faculty resources. The Department of Engineering and electrical engineering students are better served through alternate mechanical engineering courses. Moreover, beginning in 2014, the Fundamentals of Engineering Exam for electrical engineering students will not include the topical coverage provided by this course.

3. Effect of course suspension on programs or other departments, if known:

The Electrical Engineering Program will replace ME 365 with the existing ME 220: Engineering Thermodynamics I as alternate elective course.

4. Proposed term for implementation: Fall 2013

5. Dates of prior committee approvals:

Engineering Department 15 Nov. 2012

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 10/26/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Suspend a Course
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: ME 440
- 1.2 Course title: Thermal Fluid Systems Laboratory
- 1.3 Credit hours: 2

2. Rationale for the course suspension:

The course is being replaced by two 1 credit-hour laboratories: ME 332 Fluid Mechanics Laboratory and ME 333 Heat Transfer Laboratory. These laboratories will be taught concurrently with ME 330 Fluid Mechanics and ME 325 Elements of Heat Transfer, respectively.

3. Effect of course suspension on programs or other departments, if known:

The Mechanical Engineering Program will be changed to reflect this suspension and the replacement of the laboratory with ME 332 and ME 333.

4. Proposed term for implementation: Fall 2013

5. Dates of prior committee approvals:

Engineering Department 15 Nov. 2012

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 10/26/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Suspend a Course
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: ME 445
- 1.2 Course title: Dynamics Systems Laboratory
- 1.3 Credit hours: 2

2. Rationale for the course suspension:

The course does not provide efficient deployment of limited faculty resources. Department of Engineering and mechanical engineering students are better served through alternate mechanical engineering courses.

3. Effect of course suspension on programs or other departments, if known:

The Mechanical Engineering Program will be changed to reflect the suspension of this course.

4. Proposed term for implementation: Fall 2013

5. Dates of prior committee approvals:

Engineering Department 15 Nov. 2012

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

**Ogden College of Science
Department of Agriculture
Proposal to Make Multiple Revisions to a Course
(Action Item)**

Contact Person: Naomi Rowland, naomi.rowland@wku.edu, 270-745-6931

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: AGRO 317
- 1.2 Course title: Plant Pathology
- 1.3 Credit hours: 3

2. Revise course title: N/A

- 2.1 Current course title:
- 2.2 Proposed course title:
- 2.3 Proposed abbreviated title:
- 2.4 Rationale for revision of course title:

3. Revise course number: N/A

- 3.1 Current course number:
- 3.2 Proposed course number:
- 3.3 Rationale for revision of course number:

4. Revise course prerequisites/corequisites/special requirements:

- 4.1 Current prerequisites/corequisites/special requirements: none
- 4.2 Proposed prerequisites: AGRO 110 or permission of instructor
- 4.3 Rationale for revision of course prerequisites: Students are better able to understand the study of plant disease when they have had exposure to basic plant science or botany.
- 4.4 Effect on completion of major/minor sequence: none

5. Revise course catalog listing:

- 5.1 Current course catalog listing: Symptoms, causes and control of some of the more representative plant diseases. Methods of control will be stressed. Lecture, two hours; laboratory, two hours.
- 5.2 Proposed course catalog listing: Introduction to common plant pathogens and diseases of agronomically important field and forage crops, turf, vegetables and ornamentals. Topics include control measures, newly discovered diseases and plant/pathogen interactions.
- 5.3 Rationale for revision of course catalog listing: Agro 317 is being offered now after not being taught for several years. The faculty wishes to provide a more detailed and updated description of the content.

- 6. Revise course credit hours: N/A**
6.1 Current course credit hours:
6.2 Proposed course credit hours:
6.3 Rationale for revision of course credit hours:

7. Proposed term for implementation: Fall 2013

8. Dates of prior committee approvals:

Agriculture Department: _____10-18-12_____

OCSE Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Course Revisions

**Note: If course revision affects subject area, course number, or course title, complete both #1 and #2, and any other proposed changes.
If course revision does not affect subject area, course number, or course title, complete #1, and any proposed changes ONLY.**

1. **Identification of Existing Course** Existing Subject Area
 Existing Course Number
 Existing Course Title

2. **Identification of Proposed Course** Proposed Subject Area
 Proposed Course Number
 Proposed Official Course Title
 Proposed Abbreviated Title

3. **First effective term for course revision** (e.g. Spring 2012=201210, Fall 2012=201230)

4. **Offering Unit** (See Table of Code Values.) College Department

Course Revisions: Check box at left and complete only those items that are being changed. Leave other items blank.

5. **Credit Hours** Fixed Credit Hours: Variable Credit Hours

6. **Repeat Limit** (See instructions.) **Total Maximum Hours** (See instructions.)

7. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (course is intended to span more than one term)

8. **Schedule Type** (See Table of Schedule Types.)

9. **Corequisites** (courses required to be taken **concurrently** with this course)
 Subject Area Course Number Subject Area Course Number Subject Area Course Number

10. **Equivalent Courses** (Include South Campus [C suffix] courses and other equivalent courses.)
 Subject Area Course Number Subject Area Course Number Subject Area Course Number

11. **Prerequisites** (See instructions.)
 Subject Area Course Number Subject Area Course Number Subject Area Course Number

 Other

12. **Course Attribute** Honors Course Developmental Course

13. **Course Restrictions** Include/ Exclude College College Major Major Classification

14. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

Ogden College of Science and Engineering
Department of Engineering
Proposal to Create a New Course
(Action Item)

Contact Person: Warren Campbell, warren.campbell@wku.edu, 5-8988

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: CE 301
- 1.2 Course title: Field Experience in Floodplain Management
- 1.3 Abbreviated course title: Field Exp Floodplain Mgmt
- 1.4 Credit hours and contact hours: 3 credit hours 50 contact hours
- 1.5 Type of course: C
- 1.6 Prerequisites/corequisites: Junior standing
- 1.7 Course catalog listing: Field study and mitigation techniques for river flooding, karst flooding, flash flooding, alluvial fan flooding, tropical storms or a combination of these. Course involves travel.

2. Rationale:

- 2.1 Reason for developing the proposed course: This course was delivered as a selected topics course once, and is being offered again in January 2013. It provides students interested in water resources and floodplain management the opportunity to see the subjects of lectures, meet and learn from professionals working in the field, network with potential employers, and learn in a way that is impossible in the classroom. One student in the 2012 Study Away course said that he learned more in two weeks than in a year in the classroom.
- 2.2 Projected enrollment in the proposed course: 8 to 12 per year, based on previous offerings
- 2.3 Relationship of the proposed course to courses now offered by the department: CE 301 shares some content with CE 300 Floodplain Management, but CE 300 focuses on floodplain regulations and minimally on floodplain science. CE 301 will focus on floodplain science, flood history, and practical administration of floodplain programs.
- 2.4 Relationship of the proposed course to courses offered in other departments: This course will have some overlap with the following courses: GEOG 121 Meteorology, GEOG 207 Hurricanes, GEOG 208 Floods and Droughts, GEOG 209/209C Natural Disasters, GEOG 420 Geomorphology, GEOG 421 Advanced Geomorphology, GEOG 427 Water Resources, and GEOG 461 Karst Environments. The overlap with any one course is minimal.
- 2.5 Relationship of the proposed course to courses offered in other institutions: Only a few universities offer courses in floodplain management. Some that do include the University of Washington, the University of Tennessee, and the University of North Texas. However, none of these courses is field based; we believe that our course is unique in the United States.

3. Discussion of proposed course:

- 3.1 Course objectives: The course will introduce students to flood mitigation approaches that have been successful and those that have failed. Students will develop an appreciation for physical, economic, and emotional tolls of flooding. They will learn the politics of flood response, water law, and ethics. In flood mitigation and water resources management they will learn approaches to emulate and those to avoid.
- 3.2 Content outline: The outline varies from one offering to the next. The following is an abbreviated example from the CE 475 Total Immersion Floodplain Management Course.
- Maricopa County, Arizona Flood Control District: one day of presentations by staff, half day of field trip led by staff of the flood control district.
 - Boulder City and Hoover Dam
 - Boulder City tour (built for workers of Hoover Dam) (2 hours)
 - Hoover Dam tours and lectures (6 hours)
 - Clark County Flood Control District
 - Presentations by flood control district staff (1/2 day)
 - Field trip (1/2 day)
 - Death Valley
 - Field trip: alluvial fans, tectonics and climate change (4 hours)
 - Field trip: alluvial fans, canyon tours, endangered species habitat (1 day)
 - Los Angeles Aqueduct and the California Water Wars
 - Lone Pine, the aqueduct, and center of unrest (2 hours)
 - Site of Saint Francis Dam Disaster (4 hours)
 - Salton Sea (150 square mile) lake created by floods on the Colorado River in the early 1900s and the San Andreas Fault zone (1 hour)
 - Anza Borrego Desert Park field trip: alluvial fan flooding and debris flows (4 hours)
 - Large detention pond tour: Hansen Dam in Los Angeles (2 hours)
 - Alluvial fan flood solution, Magnesia Canyon debris basin, Rancho Mirage, California field trip (2 hours)
 - Whitewater River stream gage and field trip: Indio, California (1 hour)
 - Tide pools and ecosystems tour: La Jolla, California (3 hours)
 - Cliff erosion and ocean swell physics (8 hours)
- 3.3 Student expectations and requirements: Instructor evaluates students' journals and Op Ed pieces related to issues observed during the course. Students are required to display professional behavior in all interactions with hosts during the tour. They are graded on course participation, which includes asking good questions of our hosts and the instructor, and participating actively in discussions. Sometimes the course also will require lab experiences such as measuring stream flow rates and/or measuring stream suspended loads and bed load.

3.4 Tentative texts and course materials: For the 2012 course, I provided a set of notes, and no text was required. For the 2013 course, the required text is *The Great Deluge* by historian Douglas Brinkley, which deals with events leading up to, during and following Hurricane Katrina. Notes and text requirements will depend on the specific sites visited during the course.

4. Resources:

- 4.1 Library resources: None required
- 4.2 Computer resources: None required. Personal lap top or tablet desirable.

5. Budget implications:

- 5.1 Proposed method of staffing: Offered during Summer or Winter terms by existing faculty. Will not conflict with any required or elective courses during the Fall and Spring terms.
- 5.2 Special equipment needed: Varies from offering to offering, but may include current meters, pH, conductivity, and dissolved oxygen probes (owned by the Department)
- 5.3 Expendable materials needed: None
- 5.4 Laboratory materials needed: None

6. Proposed term for implementation: Fall 2013

7. Dates of prior committee approvals:

Engineering Department:	<u>11/13/2012</u>
Ogden College Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Attachment: Bibliography, Library Resources Form, Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Check One [X] Create New Course [] Temporary Course Offering

1. Has this course previously been offered on a temporary basis? [X] Yes [] No If yes, indicate the term offered 201220

2. Subject Area CE Course Number 301 Course Title (as it should appear on the transcript; maximum of 30 letters & spaces) Field Experience in FPM

3. Term for Implementation (e.g., Spring 2012=201210, Fall 2012=201230) 201230

4. Official Course Title FIELD EXPERIENCE IN FLOODPLAIN MANAGEMENT

5. Offering Unit (See Table of Code Values.) College SC Department ENGR

6. Credit Hours Fixed Credit Hours: 3.00 Variable Credit Hours [] [] []

7. Repeat Limit (See instructions.) 1 Total Maximum Hours (See instructions.) []

8. Grading (Check all that apply.) [X] Standard Letter Grading [] Pass/Fail Only [] No Grade [] In Progress - IP (Course is intended to span more than one term.)

9. Schedule Type (See Table of Schedule Types.) [C] [] []

10. Corequisites (courses required to be taken concurrently with this course) Subject Area Course Number Subject Area Course Number Subject Area Course Number

11. Equivalent Courses (Include South Campus [C suffix] courses and other equivalent courses.) Subject Area Course Number Subject Area Course Number Subject Area Course Number

12. Prerequisites (See instructions.) Subject Area Course Number Subject Area Course Number Subject Area Course Number

13. Course Attribute [] Other Junior Standing [] Honors Course [] Developmental Course

14. Course Restrictions [] Include/[] Exclude College [] College [] Major [] Major [] Classification []

15. Course Description (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.) Field study and mitigation techniques for river flooding, karst flooding, flash flooding, alluvial fan flooding, tropical storms or a combination of these. Course involves travel.

16. Approvals for Temporary Course Only: Department Head, College Dean, Graduate Dean, Provost Office, Date

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Create a New Course
(Action Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: ME 332
- 1.2 Course title: Fluid Mechanics Laboratory
- 1.3 Abbreviated course title: Fluid Mechanics Laboratory
- 1.4 Credit hours and contact hours: 1
- 1.5 Type of course: B, Lab
- 1.6 Corequisites: ME 330
- 1.7 Course catalog listing:
An applied laboratory in the modeling, prediction, and measurement of fluid mechanics components and systems, with emphasis on the preparation of engineering reports, uncertainty analysis, and the experimental design plan process. System level experiments include fluid property measurements, pipe flow and turbomachinery characteristics.

2. Rationale:

- 2.1 Reason for developing the proposed course:
The topical coverage of the to-be suspended ME 440 Thermal Fluid Systems Laboratory is being divided into two labs, coupled to their respective engineering science courses. ME 332 will be coupled in spring semesters with ME 330 Fluid Mechanics, and ME 333 will be coupled in fall semesters with ME 325 Heat Transfer. Both lab courses will also retain some of the design of experiments plan material from ME 440. ME 332 provides the student with a direct linkage to ME 330 and creates a more integrated and streamlined ME junior year in engineering laboratory practices. The course focuses on fluid mechanics and supports the ABET requirement of a balance between both stems of the curriculum.
- 2.2 Projected enrollment in the proposed course: 24 based on current enrollments in ME 330.
- 2.3 Relationship of the proposed course to courses now offered by the department:
As outlined in 2.1, this course contains the fluid mechanics topics from ME 440 and provides laboratory experiences to enhance ME 330.
- 2.4 Relationship of the proposed course to courses offered in other departments: None
- 2.5 Relationship of the proposed course to courses offered in other institutions:
Similar laboratory courses are offered at numerous institutions as stand-alone fluid mechanics laboratories. Other institutions also couple a discrete laboratory course with a specific fluid mechanics engineering science lecture course.
Examples include:
Purdue University: ME31900: Fluids Mechanics Lab, 1 hr. credit

University of Memphis: ME 3335: Fluid Mechanics Lab, 1 hr credit.
California Polytechnic State University: ME 347: Combined Fluid
Mechanics and Lab, 4 hrs.

3. Discussion of proposed course:

3.1 Course objectives:

Equip students to plan, conduct, and evaluate the results of measurement and testing of fluid mechanics systems as well as develop the capability to produce professional engineering reports. The basic theory and objective of each experiment, including the theory and application of fluid measurements and instrumentation, is presented. Students will apply and compare fundamental knowledge of fluid mechanics, and at times thermodynamics, to experimental results.

3.2 Content outline:

Design of Experiments Plan Topics:

- Experimental planning
- Methods of measurement
- Selection of instrumentation
- Prediction of uncertainty
- Analysis of data and results
- Estimation of error
- Reporting of experimental results

List of Selected Experiments:

- Viscosity of a fluid
- Fluid flow measurements
- Fluid Bernoulli test bed – conservation of energy
- Impact of a jet – momentum transfer
- Hydrostatic forces on planar and curved surfaces
- Viscous internal flow – laminar and turbulent regimes
- Pump characteristics and similarity

3.3 Student expectations and requirements:

Students are expected to plan, conduct, and evaluate the results of measurement and testing of fluid mechanics systems as well as develop the capability to produce professional engineering reports, all of which will be evaluated by the instructor.

3.4 Tentative texts and course materials:

No required textbook. Laboratory handouts will be provided. Textbooks used in ME220, ME 310 and ME 330 will serve as reference sources for the course.

4. Resources:

4.1 Library resources: None

4.2 Computer resources: Computer hardware and software are available in the thermal fluids laboratory and ME student design center to support the course.

5. Budget implications:

- 5.1 Proposed method of staffing: Current staffing adequate
- 5.2 Special equipment needed: None
- 5.3 Expendable materials needed: Limited and currently managed through foundation funds
- 5.4 Laboratory materials needed: Limited and currently managed through foundation funds

6. Proposed term for implementation: Spring 2014

7. Dates of prior committee approvals:

Engineering Department:	<u>15 Nov. 2012</u>
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Attachment: Bibliography, Library Resources Form, Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Check One **Create New Course**
 Temporary Course Offering

1. **Has this course previously been offered on a temporary basis?** Yes No If yes, indicate the term offered 201310

2. **Subject Area** ME **Course Number** 332 **Course Title** (as it should appear on the transcript; maximum of 30 letters & spaces) FLUID MECHANICS LABORATORY

3. **Term for Implementation** (e.g., Spring 2012=201210, Fall 2012=201230) 201330

4. **Official Course Title** FLUID MECHANICS LABORATORY

5. **Offering Unit** (See Table of Code Values.) College SC Department ENGR

6. **Credit Hours** Fixed Credit Hours: 1.00 Variable Credit Hours

7. **Repeat Limit** (See instructions.) 0 **Total Maximum Hours** (See instructions.) 1.00

8. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (Course is intended to span more than one term.)

9. **Schedule Type** (See Table of Schedule Types.)

10. **Corequisites** (courses required to be taken **concurrently** with this course)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number
ME	330				

11. **Equivalent Courses** (Include Commonwealth School courses and other equivalent courses.)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number

12. **Prerequisites** (See instructions.)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number

13. **Course Attribute** Other Honors Course Developmental Course

14. **Course Restrictions** Include/ Exclude College College Major Major Classification

15. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

An applied laboratory in the modeling, prediction, and measurement of fluid mechanics components and systems, with emphasis on the preparation of engineering reports, uncertainty analysis, and the experimental design plan process. System level experiments include fluid property measurements, pipe flow and turbomachinery characteristics.

16. **Approvals:** Department Head _____ Date _____
 Temporary course: College Dean _____ Date _____
 Graduate Dean _____ Date _____
 Undergraduate Curriculum Committee _____ University Senate _____
 Graduate Council _____

Office of the Registrar Use

CIP

Banner Data _____

Course Description _____

Evaluate _____

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Create a New Course
(Action Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: ME 333
- 1.2 Course title: Heat Transfer Laboratory
- 1.3 Abbreviated course title: Heat Transfer Laboratory
- 1.4 Credit hours and contact hours: 1
- 1.5 Type of course: B, Lab
- 1.6 Corequisites: ME 325
- 1.7 Course catalog listing:
An applied laboratory in the modeling, prediction, and measurement of fluid mechanics components and systems, with emphasis on the preparation of engineering reports, uncertainty analysis, and the experimental design plan process. System level experiments include heat transfer measurements and heat transfer component characteristics.

2. Rationale:

- 2.1 Reason for developing the proposed course:
The topical coverage of the to-be suspended ME 440 Thermal Fluid Systems Laboratory is being divided into two labs, coupled to their respective engineering science courses. ME 332 will be coupled in spring semesters with ME 330 Fluid Mechanics, and ME 333 will be coupled in fall semesters with ME 325 Heat Transfer. Both lab courses will also retain some of the design of experiments plan material from ME 440. ME 333 provides the student with a direct linkage to ME 325 and creates a more integrated and streamlined ME senior year in engineering laboratory practices. The course focuses on heat transfer and supports the ABET requirement of a balance between both stems of the curriculum.
- 2.2 Projected enrollment in the proposed course: 24 based on the current enrollments in ME 325.
- 2.3 Relationship of the proposed course to courses now offered by the department:
As outlined in 2.1, this course contains the heat transfer topics from ME 440 and provides laboratory experiences to enhance ME 325.
- 2.4 Relationship of the proposed course to courses offered in other departments: None
- 2.5 Relationship of the proposed course to courses offered in other institutions:
Similar laboratory courses are offered at numerous institutions as stand-alone fluid mechanics laboratories. Other institutions also couple a discrete laboratory course with a specific fluid mechanics engineering science lecture course.
Examples include:
Purdue University: ME32200: Heat Transfer Lab, 1 hr. credit

University of Memphis: ME 3355: Thermo/Heat Transfer Lab, 1 hr credit.
California Polytechnic State University: ME 346: Heat Transfer and
Thermodynamics Lab, 1 hr.

3. Discussion of proposed course:

3.1 Course objectives:

Equip students to plan, conduct, and evaluate the results of measurement and testing of thermal-fluid systems as well as develop the capability to produce professional engineering reports. The basic theory and objective of each experiment, including the theory and application of thermal-fluid measurements and instrumentation, is presented in lectures either in the lab or during the ME325 class. Students will apply and compare fundamental knowledge of heat transfer, and at times thermodynamics and fluid mechanics, to experimental results.

3.2 Content outline:

Design of Experiments Plan Topics:

- Experimental planning
- Methods of measurement
- Selection of instrumentation
- Prediction of uncertainty
- Analysis of data and results
- Estimation of error
- Reporting of experimental results

List of Selected Experiments:

- Thermodynamic 1st Law application
- Pipe-in-pipe, shell & tube, and plate & frame heat exchangers
- Conduction heat transfer experiment
- Convection heat transfer experiment
- Radiation heat transfer experiment
- Vapor compression cycles – refrigeration and heat pump

3.3 Student expectations and requirements:

Students are expected to plan, conduct, and evaluate the results of measurement and testing of fluid mechanics systems as well as develop the capability to produce professional engineering reports, all of which will be evaluated by the instructor.

3.4 Tentative texts and course materials:

No required textbook. Laboratory handouts will be provided. Textbooks used in ME220, ME 310, ME 325 and ME330 will serve as reference sources for the course.

4. Resources:

4.1 Library resources: None

4.2 Computer resources: Computer hardware and software are available in the thermal fluids laboratory and ME student design center to support the course.

5. Budget implications:

- 5.1 Proposed method of staffing: Current staffing adequate
- 5.2 Special equipment needed: None
- 5.3 Expendable materials needed: Limited and currently managed through foundation funds
- 5.4 Laboratory materials needed: Limited and currently managed through foundation funds

6. Proposed term for implementation: Spring 2014

7. Dates of prior committee approvals:

Engineering Department:	<u>15 Nov. 2012</u>
OCSE Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Attachment: Bibliography, Library Resources Form, Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Check One **Create New Course**
 Temporary Course Offering

1. **Has this course previously been offered on a temporary basis?** Yes No If yes, indicate the term offered 201310

2. **Subject Area** **Course Number** **Course Title** (as it should appear on the transcript; maximum of 30 letters & spaces)
ME 333 HEAT TRANSFER LABORATORY

3. **Term for Implementation** (e.g., Spring 2012=201210, Fall 2012=201230) 201330

4. **Official Course Title** HEAT TRANSFER LABORATORY

5. **Offering Unit** (See Table of Code Values.) College SC Department ENGR

6. **Credit Hours** Fixed Credit Hours: 1.00 Variable Credit Hours

7. **Repeat Limit** (See instructions.) 0 **Total Maximum Hours** (See instructions.) 1.00

8. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (Course is intended to span more than one term.)

9. **Schedule Type** (See Table of Schedule Types.)

10. **Corequisites** (courses required to be taken **concurrently** with this course)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number
ME	325	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

11. **Equivalent Courses** (Include Commonwealth School courses and other equivalent courses.)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

12. **Prerequisites** (See instructions.)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

13. **Course Attribute** Other Honors Course Developmental Course

14. **Course Restrictions** Include/ Exclude College College Major Major Classification

15. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

An applied laboratory in the modeling, prediction, and measurement of fluid mechanics components and systems, with emphasis on the preparation of engineering reports, uncertainty analysis, and the experimental design plan process. System level experiments include heat transfer measurements and heat transfer component characteristics.

16. **Approvals:** Department Head _____ Date _____
 Temporary course: College Dean _____ Date _____
 Graduate Dean _____ Date _____
 Undergraduate Curriculum Committee _____ University Senate _____
 Graduate Council _____

Office of the Registrar Use

CIP

Banner Data _____

Course Description _____

Evaluate _____

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Make Multiple Revisions to a Course
(Action Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 745-6858

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: ME 176
- 1.2 Course title: Mechanical Engineering Freshman Design
- 1.3 Credit hours: 1.0

2. Revise course title: N/A

- 2.1 Current course title:
- 2.2 Proposed course title:
- 2.3 Proposed abbreviated title:
- 2.4 Rationale for revision of course title:

3. Revise course number: N/A

- 3.1 Current course number:
- 3.2 Proposed course number:
- 3.3 Rationale for revision of course number:

4. Revise course prerequisites/corequisites/special requirements:

- 4.1 Current prerequisites:
For transfer or change of major students who have earned at least 24 semester hours of credit or have completed a course equivalent to the basic topics of the generic WKU University Experience
- 4.2 Proposed prerequisites:
MATH 116 or higher
- 4.3 Rationale for revision of course prerequisites:
The original prerequisite was intended to limit this course to transfer and change-of-major students when a program-specific University Experience course was in place. The Department of Engineering has moved to an optional ENGR 175 University Experience – Engineering course. ME 176 is now to be required to ensure each ME student has the foundational course in engineering design as well as the basic departmental safety training.
- 4.4 Effect on completion of major/minor sequence:
None, the program has always accepted either ME 175 or 176 for credit.

5. Revise course catalog listing:

- 5.1 Current course catalog listing:
An introduction to Mechanical Engineering. The design process and basic professional tools are introduced through multiple projects. A replacement for

ME 175 for transfer or change of major students. Permission of instructor only.
Course Fee

5.2 Proposed course catalog listing:

An introduction to Mechanical Engineering. The design process and basic professional tools are introduced through multiple projects. Course fee.

5.3 Rationale for revision of course catalog listing:

The catalog listing is being changed to remove the transfer/change of major intent of the course; no topical changes are being made to the course.

6. Revise course credit hours: N/A

6.1 Current course credit hours:

6.2 Proposed course credit hours:

6.3 Rationale for revision of course credit hours:

7. Proposed term for implementation: Fall 2012

8. Dates of prior committee approvals:

Department of Engineering 15 Nov. 2012

OCSE Curriculum Committee _____

University Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

COURSE INVENTORY FORM

Course Revisions

**Note: If course revision affects subject area, course number, or course title, complete both #1 and #2, and any other proposed changes.
If course revision does not affect subject area, course number, or course title, complete #1, and any proposed changes ONLY.**

1. **Identification of Existing Course**
- Existing Subject Area
 Existing Course Number
 Existing Course Title
2. **Identification of Proposed Course**
- Proposed Subject Area
 Proposed Course Number
 Proposed Course Title

Course Revisions: Check box at left and complete only those items that are being changed. Leave other items blank.

3. **First effective term for course revision** (e.g. Spring 2010=201010, Fall 2010=201030)
4. **Offering Unit** (See Table of Code Values.) College Department
5. **Credit Hours** Fixed Credit Hours: Variable Credit Hours
6. **Repeat Limit** (See instructions.) **Total Maximum Hours** (See instructions.)
7. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (course is intended to span more than one term)
8. **Schedule Type** (See Table of Schedule Types.)
9. **Corequisites** (courses required to be taken **concurrently** with this course)
- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Subject Area | Course Number | Subject Area | Course Number | Subject Area | Course Number |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
10. **Equivalent Courses** (Include Community College courses and other equivalent courses.)
- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Subject Area | Course Number | Subject Area | Course Number | Subject Area | Course Number |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
11. **Prerequisites** (See instructions.)
- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Subject Area | Course Number | Subject Area | Course Number | Subject Area | Course Number |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
- Other
12. **Course Attribute** Honors Course Developmental Course
13. **Course Restrictions** Include/ Exclude College College Major Major Classification
14. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

15. **Approvals:** Department Head _____ Date _____
 University Curriculum Committee _____ University Senate _____
 Graduate Council _____

Office of the Registrar Use	
CIP	<input type="text" value=""/>
Banner Data	_____
Course Description	_____
Evaluate	_____

Proposal Date: 10/18/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 745-6858

1. Identification of course:

- 1.1 Course prefix (subject area) and number: ME 180
- 1.2 Course title: Freshman Design II
- 1.3 Credit hours: 3.0

2. Current prerequisites/corequisites/special requirements:

Prerequisite: ME 175 or 176, or permission of instructor, and MATH 136 with a grade of "C" or better

Corequisite: none

3. Proposed prerequisites/corequisites/special requirements:

Prerequisites: ME 176 and MATH 136 with a grade of "C" or better

Corequisite: none

4. Rationale for the revision of prerequisites/corequisites/special requirements:

ME 175 is being suspended for eventual deletion, and the option to waive the ME 176 requirement is not feasible due to the safety training topics contained in ME 176.

5. Effect on completion of major/minor sequence: None

6. Proposed term for implementation: Fall 2013

7. Dates of prior committee approvals:

Department of Engineering 15 Nov. 2012

OCSE Curriculum Committee _____

University Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Course Revisions

**Note: If course revision affects subject area, course number, or course title, complete both #1 and #2, and any other proposed changes.
If course revision does not affect subject area, course number, or course title, complete #1, and any proposed changes ONLY.**

1. **Identification of Existing Course**
- Existing Subject Area
 Existing Course Number
 Existing Course Title
2. **Identification of Proposed Course**
- Proposed Subject Area
 Proposed Course Number
 Proposed Course Title

Course Revisions: Check box at left and complete only those items that are being changed. Leave other items blank.

3. **First effective term for course revision** (e.g. Spring 2010=201010, Fall 2010=201030)
4. **Offering Unit** (See Table of Code Values.) College Department
5. **Credit Hours** Fixed Credit Hours: Variable Credit Hours
6. **Repeat Limit** (See instructions.) **Total Maximum Hours** (See instructions.)
7. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (course is intended to span more than one term)
8. **Schedule Type** (See Table of Schedule Types.)
9. **Corequisites** (courses required to be taken **concurrently** with this course)
- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Subject Area | Course Number | Subject Area | Course Number | Subject Area | Course Number |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
10. **Equivalent Courses** (Include Community College courses and other equivalent courses.)
- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Subject Area | Course Number | Subject Area | Course Number | Subject Area | Course Number |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
11. **Prerequisites** (See instructions.)
- | | | | | | |
|---------------------------------|----------------------------------|----------------------|----------------------|----------------------|----------------------|
| Subject Area | Course Number | Subject Area | Course Number | Subject Area | Course Number |
| <input type="text" value="ME"/> | <input type="text" value="176"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
- Other
12. **Course Attribute** Honors Course Developmental Course
13. **Course Restrictions** Include/ Exclude College College Major Major Classification
14. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

15. **Approvals:** Department Head _____ Date _____
 University Curriculum Committee _____ University Senate _____
 Graduate Council _____

Office of the Registrar Use	
CIP	<input type="text" value=""/>
Banner Data	_____
Course Description	_____
Evaluate	_____

Proposal Date: 10/18/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 745-6858

1. Identification of course:

- 1.1 Course prefix (subject area) and number: ME 220
- 1.2 Course title: Engineering Thermodynamics I
- 1.3 Credit hours: 3.0

2. Current prerequisites/corequisites/special requirements:

Prerequisite: MATH 237, ME 200 AND MATH 331

Corequisite: MATH 331

3. Proposed prerequisites/corequisites/special requirements:

Prerequisites: EM 221 OR EM 222, AND MATH 331

Corequisite: MATH 331

4. Rationale for the revision of prerequisites/corequisites/special requirements:

The proposed prerequisites and corequisite more closely reflect the student skills necessary for the course. This change will also correct a previous revision, which occurred in 2009, aligning the course prerequisite with the ME 200 design course. This has now been determined to be neither appropriate nor relevant for non-ME students.

5. Effect on completion of major/minor sequence: None

6. Proposed term for implementation: Fall 2013

7. Dates of prior committee approvals:

Department of Engineering 15 Nov. 2012

OCSE Curriculum Committee _____

University Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Course Revisions

**Note: If course revision affects subject area, course number, or course title, complete both #1 and #2, and any other proposed changes.
If course revision does not affect subject area, course number, or course title, complete #1, and any proposed changes ONLY.**

1. **Identification of Existing Course** Existing Subject Area
Existing Course Number
Existing Course Title
2. **Identification of Proposed Course** Proposed Subject Area
Proposed Course Number
Proposed Course Title

Course Revisions: Check box at left and complete only those items that are being changed. Leave other items blank.

3. **First effective term for course revision** (e.g. Spring 2010=201010, Fall 2010=201030)
4. **Offering Unit** (See Table of Code Values.) College Department
5. **Credit Hours** Fixed Credit Hours: Variable Credit Hours
6. **Repeat Limit** (See instructions.) **Total Maximum Hours** (See instructions.)
7. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (course is intended to span more than one term)
8. **Schedule Type** (See Table of Schedule Types.)
9. **Corequisites** (courses required to be taken **concurrently** with this course)
Subject Area Course Number Subject Area Course Number Subject Area Course Number
10. **Equivalent Courses** (Include Community College courses and other equivalent courses.)
Subject Area Course Number Subject Area Course Number Subject Area Course Number
11. **Prerequisites** (See instructions.)
Subject Area Course Number Subject Area Course Number Subject Area Course Number

 Other
12. **Course Attribute** Honors Course Developmental Course
13. **Course Restrictions** Include/ Exclude College College Major Major Classification
14. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

15. **Approvals:** Department Head _____ Date _____
University Curriculum Committee _____ University Senate _____
Graduate Council _____

Office of the Registrar Use	
CIP	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Banner Data	_____
Course Description	_____
Evaluate	_____

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 745-6858

1. Identification of course:

- 1.1 Course prefix (subject area) and number: ME 300
- 1.2 Course title: Junior Design
- 1.3 Credit hours: 2.0

2. Current prerequisites/corequisites/special requirements:

Prerequisite: ME 200, ME 344. Students must have satisfied the Mechanical Engineering Pre-Major requirements as shown in the iCAP system.

Pre or Corequisite: ME 310

3. Proposed prerequisites/corequisites/special requirements:

Prerequisites: ME 200, ME 310, and ME 344. Students must have satisfied the Mechanical Engineering Pre-Major requirements as shown in the iCAP system.

Corequisite: None

4. Rationale for the revision of prerequisites/corequisites/special requirements:

Moving ME 310 to the list of prerequisites reflects a reordering of the courses in the junior year, and ensures the topical content of ME 310 is present before taking ME 300.

5. Effect on completion of major/minor sequence: None

6. Proposed term for implementation: Fall 2013

7. Dates of prior committee approvals:

Department of Engineering 15 Nov. 2012

OCSE Curriculum Committee _____

University Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

COURSE INVENTORY FORM

Course Revisions

**Note: If course revision affects subject area, course number, or course title, complete both #1 and #2, and any other proposed changes.
If course revision does not affect subject area, course number, or course title, complete #1, and any proposed changes ONLY.**

1. **Identification of Existing Course** Existing Subject Area
Existing Course Number
Existing Course Title

2. **Identification of Proposed Course** Proposed Subject Area
Proposed Course Number
Proposed Course Title

Course Revisions: Check box at left and complete only those items that are being changed. Leave other items blank.

- 3. **First effective term for course revision** (e.g. Spring 2010=201010, Fall 2010=201030)
- 4. **Offering Unit** (See Table of Code Values.) College Department
- 5. **Credit Hours** Fixed Credit Hours: Variable Credit Hours
- 6. **Repeat Limit** (See instructions.) **Total Maximum Hours** (See instructions.)
- 7. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (course is intended to span more than one term)
- 8. **Schedule Type** (See Table of Schedule Types.)

9. **Corequisites** (courses required to be taken **concurrently** with this course)
Subject Area Course Number Subject Area Course Number Subject Area Course Number

10. **Equivalent Courses** (Include Community College courses and other equivalent courses.)
Subject Area Course Number Subject Area Course Number Subject Area Course Number

11. **Prerequisites** (See instructions.)
Subject Area Course Number Subject Area Course Number Subject Area Course Number

Other

- 12. **Course Attribute** Honors Course Developmental Course
- 13. **Course Restrictions** Include/ Exclude College College Major Major Classification
- 14. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

15. **Approvals:** Department Head _____ Date _____
University Curriculum Committee _____ University Senate _____
Graduate Council _____

Office of the Registrar Use	
CIP	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/>
Banner Data	_____
Course Description	_____
Evaluate	_____

Proposal Date: 10/26/12

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 745-6858

1. Identification of course:

- 1.1 Course prefix (subject area) and number: ME 330
- 1.2 Course title: Fluid Mechanics
- 1.3 Credit hours: 3.0

2. Current prerequisites/corequisites/special requirements:

Prerequisite: ME 220
Corequisite: MATH 331

3. Proposed prerequisites/corequisites/special requirements:

Prerequisites: ME 220 AND MATH 331
Corequisite: ME 220

4. Rationale for the revision of prerequisites/corequisites/special requirements:

The proposed prerequisites and corequisite more closely reflect the student skills necessary for the course. These changes also create an alternate non-sequential path through the thermal fluids curriculum, allowing off-semester offerings of ME 220 which would enhance student progress through the ME curriculum.

5. Effect on completion of major/minor sequence: None

6. Proposed term for implementation: Fall 2013

7. Dates of prior committee approvals:

Department of Engineering	<u>15 Nov. 2012</u>
OCSE Curriculum Committee	_____
University Curriculum Committee	_____
University Senate	_____

Attachment: Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Course Revisions

**Note: If course revision affects subject area, course number, or course title, complete both #1 and #2, and any other proposed changes.
If course revision does not affect subject area, course number, or course title, complete #1, and any proposed changes ONLY.**

1. **Identification of Existing Course** Existing Subject Area
 Existing Course Number
 Existing Course Title
2. **Identification of Proposed Course** Proposed Subject Area
 Proposed Course Number
 Proposed Course Title

Course Revisions: Check box at left and complete only those items that are being changed. Leave other items blank.

3. **First effective term for course revision** (e.g. Spring 2010=201010, Fall 2010=201030)
4. **Offering Unit** (See Table of Code Values.) College Department
5. **Credit Hours** Fixed Credit Hours: Variable Credit Hours
6. **Repeat Limit** (See instructions.) **Total Maximum Hours** (See instructions.)
7. **Grading** (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress – IP (course is intended to span more than one term)
8. **Schedule Type** (See Table of Schedule Types.)
9. **Corequisites** (courses required to be taken **concurrently** with this course)
 Subject Area Course Number Subject Area Course Number Subject Area Course Number
10. **Equivalent Courses** (Include Community College courses and other equivalent courses.)
 Subject Area Course Number Subject Area Course Number Subject Area Course Number
11. **Prerequisites** (See instructions.)
 Subject Area Course Number Subject Area Course Number Subject Area Course Number

 Other
12. **Course Attribute** Honors Course Developmental Course
13. **Course Restrictions** Include/ Exclude College College Major Major Classification
14. **Course Description** (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

15. **Approvals:** Department Head _____ Date _____
 University Curriculum Committee _____ University Senate _____
 Graduate Council _____

Office of the Registrar Use	
CIP	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/>
Banner Data	_____
Course Description	_____
Evaluate	_____

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise A Program
(Action Item)**

Contact Person: Warren Campbell, warren.campbell@wku.edu, 5-8988

1. Identification of program:

- 1.1 Current program reference number: 361
- 1.2 Current program title: Minor in Floodplain Management
- 1.3 Credit hours: 22

2. Identification of the proposed program changes:

Changes include adding courses to the list of electives and changing one required course.

3. Detailed program description:

Required Courses in Existing Curriculum	Proposed Courses In new Curriculum
CE 160/161	CE 160/161
CE 300	CE 300
GEOG 317 or GEOG 318	GEOG 316
CE 461 or GEOG/GEOL 310	CE 461 or GEOG/GEOL 310
Elective Courses	
GEOG 121, 207, 208, 209, 391, 414, 433, 416	GEOG 121, 207, 208, 209, 391, 414, 433, 416
GEOG 417, 419, 437, and 438	GEOG 317, 318 , 417, 419, 437, 438
GEOG/GEOL 420, GEOG 422, 424, 426, 427	GEOG/GEOL 420, GEOG 422, 424, 426, 427
GEOG 431, 445, 455, 474, 477	GEOG 431, 445, 455, 474, 477
GEOL 111, 113, CE 351, CE 380/381, CE 461	GEOL 111, 113, CE 351, CE 380/381, CE 461
CE 480/481	CE 480/481, CE 301
	JOUR 201, 202

4. Rationale for the proposed program change:

Regarding the change from GEOG 317 and 318 to 316, these courses have been rearranged so that an engineering student can no longer take GEOG 317 without 316. These have been moved to electives. CE 301 Field Experience in Floodplain Management is a new course. Regarding the journalism classes, the Association of State Floodplain Managers, the largest U.S. floodplain management professional society surveyed its members two years ago. This survey had more than 1200 respondents and it indicated that floodplain managers often must deal with media. Having an understanding

of how media affect public perceptions and understanding how media outlets operate is useful to floodplain managers.

5. Proposed term for implementation: Fall 2013

6. Dates of prior committee approvals:

Engineering Department: 11/13/2012

Ogden College Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Proposal Date: 10/18/2012

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise a Program
(Action Item)**

Contact Person: Joel Lenoir email: joel.lenoir@wku.edu, 745-6858

1. Identification of program

- 1.1 Reference Number: 543
- 1.2 Current Program Title: Mechanical Engineering
- 1.3 Credit Hours: 60.5

2. Identification of proposed changes

Courses and Curriculum

- Remove the option of ME 175 or 176 and replace with ME 176 only
- Replace existing chemistry sequence CHEM 120/121 with the sequences CHEM 116/106 or 120/121
- Replace the existing required mathematics elective with a mathematics/science elective chosen from a list, with a required minimum of 32 hours of mathematics and science beginning with MATH 136
- Replace the required electrical engineering course EE 350 with EE 210
- Delete the currently required courses ME 285 and ME 416 from the program
- Replace the required ME 321 with an additional technical elective for a total of four
- Replace the two upper division lab courses ME 440/445 with new labs ME 332/333

Credit Hours: Program required technical course hours change from 68 hours to 60.5 hours. Other required mathematics and science hours will change from a fixed 33 hours to a minimum of 32 hours. Students are required to satisfy the WKU General Education requirements.

Program Academic Policy

Revision of Program Academic Standards: Removing HIST 119/120 from the Pre-Major requirements. Addition of EM 221, MATH 237, and PHYS 265/266 to the list of required courses. Inclusion of CHEM 116/106 as an option to CHEM 120/121. Replacement of mathematics elective with a list of mathematics and science electives.

Catalog statement of existing policy:

Academic Standards for the WKU/UK Joint Mechanical Engineering Program:

Students are admitted as a Pre-Major in Mechanical Engineering. In order to transition from Pre-Major to Major and to graduate with a degree in Mechanical

Engineering, students must earn a GPA of 2.5 in the following courses and a grade of "C" or better in each course in the list. This requirement must be completed before enrolling in ME 300: Junior Design.

ME 175: University Experience 2/1hrs (or ME 176 for transfers)
ENG 100: Freshman English 3 hrs
HIST 119 or 120: Western Civilization 3 hrs
COMM 145 or 161: 3 hrs
MATH 136: Calculus and Analytic Geometry I 4 hrs
MATH 137: Calculus and Analytic Geometry II 4 hrs
ME 180: Freshman Design II 3 hrs
PHYS 255/256: University Physics I and Laboratory 5 hrs
CHEM 120/121: College Chemistry I and Laboratory 5 hrs
ME 240/241: Materials and Methods of Manufacturing 4 hrs
TOTAL HRS 36/35 hrs

After satisfying the requirements to transition from Pre-Major to Major in Mechanical Engineering, the student must also earn a grade of C or better in the following courses required of the major: EM 221, 303, ME 200, 220, 310, 330, 347, MATH 237, MATH 331.

Each Mechanical Engineering student's transcript must include at least 16 hours of credit in the major taught by UK faculty members.

Each Mechanical Engineering student must also take at least one mathematics elective. This elective must meet three criteria:

- It must be a course offered by the Department of Mathematics
- It must not be a course repeating subject matter already covered in a required course.
- It must be of a level greater than or equal to the required courses in mathematics.

Catalog statement of proposed policy:

Academic Standards for the WKU/UK Joint Mechanical Engineering Program:

Students are admitted as a Pre-Major in Mechanical Engineering. In order to transition from Pre-Major to Major and to graduate with a degree in Mechanical Engineering, students must satisfy the requirements below. All courses listed below must have a grade of C or better.

Written and Oral Communication

- ENG 100 or equivalent credit 3 hrs.
- COMM 145 or 161 or equivalent credit 3 hrs.

Engineering Design

- ME 176: Mechanical Engineering Freshman Design 1 hr.

ME 180: Freshman Design II	3 hrs.
<u>Mathematics and Science</u>	
- MATH 136: Calculus I or equivalent credit	4 hrs.
- MATH 137: Calculus II or equivalent credit	4 hrs.
- MATH 237: Multivariable Calculus	4 hrs.
- PHYS 255/256: University Physics I/LAB	5 hrs.
- PHYS 265/266: University Physics II/LAB	5 hrs.
- CHEM 116/106 or CHEM 120/121	4 or 5 hrs.

Engineering Science

- ME 240/241: Materials and Methods of Manufacturing	3/1 hrs.
- EM 221 or EM 222: Statics	3 hrs.

TOTAL HOURS: 43 or 44 hours

These Pre-Major eligibility requirements MUST be completed before enrolling ME 300: Junior Design. Check iCAP for progress towards meeting these requirements.

After satisfying the requirements to transition from Pre-Major to Major in Mechanical Engineering, the student must also earn a grade of C or better in the following courses required of the major: EM 303, ME 200, 220, 310, 330, 347, and MATH 331.

Each Mechanical Engineering student's transcript must include at least 16 hours of credit in the major taught by UK faculty members.

Each Mechanical Engineering student must also take at least one mathematics/science elective, for a total of a minimum of 32 hours of mathematics and science beginning at MATH 136. This elective must be chosen from the following list :

- PH 280: INTRODUCTION TO ENVIRONMENTAL SCIENCE. (Equivalent to AGRI 280, CHEM 280, ENV 280, and GEOG 280)
- ASTR 214: GENERAL ASTRONOMY
- BIOL 120/121: BIOLOGICAL CONCEPTS: CELLS METABOLISM AND GENETICS
- BIOL 122/123: BIOLOGICAL CONCEPTS: EVOLUTION, DIVERSITY, AND ECOLOGY
- BIOL 207/207C: GENERAL MICROBIOLOGY
- CHEM 222/223: COLLEGE CHEMISTRY II
- GEOG 121: METEOROLOGY
- GEOL 111: THE EARTH
- GEOL 112: EARTH HISTORY
- PHYS 316: COMPUTATIONAL PHYSICS
- PHYS 318: DATA ACQUISITION USING LABVIEW
- PHYS 320: INTRODUCTORY MODERN PHYSICS I

- MATH 305: INTRODUCTION TO MATHEMATICAL MODELING
- MATH 307: INTRODUCTION TO LINEAR ALGEBRA
- MATH 310: INTRODUCTION TO DISCRETE MATHEMATICS
- MATH 370: APPLIED TECHNIQUES IN MATHEMATICS
- STAT 301: INTRODUCTORY PROBABILITY AND APPLIED STATISTICS

3. Detailed program description:

<u>Current Technical Courses</u>			<u>Proposed Technical Courses</u>		
ME175	University Experience – ME		ME176	Freshman Design	1
	or ME 176 Freshman Design	2 or 1			
	(transfers/change majors, credits > 24 hrs)				
ME 180	Freshman Design II	3	ME 180	Freshman Design II	3
ME 240	Materials and Methods	3	ME 240	Materials and Methods	3
ME 241	Materials and Methods LAB	1	ME 241	Materials and Methods LAB	1
EM 221	UK Statics	3	EM 221	UK Statics	3
EE 350	Fundamentals of El. Engr.	4	EE 210	Circuits & Networks I	3.5
ME 285	Fundamentals Ind. Auto.	1			
ME 200	Sophomore Design	3	ME 200	Sophomore Design	3
EM 313	Dynamics	3	EM 313	Dynamics	3
EM 303	WKU Mechs. of D. Solids	3	EM 303	WKU Mechs. of Def. Solids	3
ME 347	Mech. Systems Lab.	1	ME 347	Mech. Systems Lab.	1
ME 220	Engineering Thermo. I	3	ME 220	Engineering Thermo. I	3
ME 344	Mechanical Design	3	ME 344	Mechanical Design	3
ME 300	Junior Design	2	ME 300	Junior Design	2
ME 310	Eng. Instru. & Exp.	3	ME 310	Eng. Instru. & Exp.	3
ME 321	Eng. Thermo. II	3	ME Technical Elective		3
ME 330	Fluid Mechanics	3	ME 330	Fluid Mechanics	3
ME 325	Heat Transfer	3	ME 325	Heat Transfer	3
ME 416	UK Dyn. Systems Elective	3			
ME 400	Mech. Engr. Design	2	ME 400	Mech. Engr. Design	2
ME 440	Therm/Fluids Lab	2	ME 332	Fluid Mechanics Laboratory	1
ME 445	Dynamic Systems Lab	2	ME 333	Heat Transfer Laboratory	1
ME 412	ME Senior Project	3	ME 412	ME Senior Project	3
ME Technical Elective		3	ME Technical Elective		3
ME Technical Elective		3	ME Technical Elective		3
ME Technical Elective		3	ME Technical Elective		3
Technical Course Total:		68 or 67	Technical Course Total:		60.5
<u>Other Requirements:</u>			<u>Other Requirements:</u>		
CHEM 120	College Chemistry 1	4	CHEM 120/121	College Chem 1/Lab	5
CHEM 121	College Chemistry I Lab	1	<u>OR</u> CHEM 116/106	Int Coll Chem/Lab	4
PHYS 255	University Physics I	4	PHYS 255	University Physics I	4
PHYS 256	University Physics I Lab	1	PHYS 256	University Physics I Lab	1
PHYS 265	University Physics II	4	PHYS 265	University Physics II	4
PHYS 266	University Physics II Lab	1	PHYS 266	University Physics II Lab	1

MATH 136	Calculus I	4	MATH 136	Calculus I	4
MATH 137	Calculus II	4	MATH 137	Calculus II	4
MATH 237	Multivariable Calculus	4	MATH 237	Multivariable Calculus	4
MATH 331	Differential Equations	3	MATH 331	Differential Equations	3
Mathematics Elective		3	Mathematics/Science Elective		3
Other Required Mathematics and Science Hours:		33	Other Required Mathematics and Science Hours: A minimum of 32 hours beginning with MATH 136		
Students must also satisfy the WKU General Education requirements			Students must also satisfy the WKU General Education requirements		

4. Rationale of proposed program revisions:

- Remove the option of ME 175 or 176 and replace with ME 176 only
 The ME program has moved away from a required ME 175 University Experience course for new students. The existing ME 176, which was originally the option for transfer and change-of-major students, will now be the beginning course in the program. The department has an optional ENGR 175 for those students desiring a University Experience course in engineering.
- Replace existing chemistry sequence CHEM 120/121 with the sequences CHEM 116/106 or 120/121
 The accreditation agency for engineering, ABET, has recently modified the mathematics and science requirements for mechanical engineering. The requirement of a minimum of 32 hours of mathematics and science remains, with Calculus I and II, Multivariable Calculus, and Differential Equations being the only specified courses. Programs are able to specify the appropriate science courses to support the program. An overall review of the program outcomes supports the addition of CHEM 116/106 as an option to 120/121. Students placing directly into 120/121 via the placement test will be encouraged to take those courses.
- Replace the existing required mathematics elective with a mathematics/science elective
 This change will broaden choice for students planning their post-baccalaureate options. The list shown above give a wide range of choices, but a minimum of 32 hours of mathematics and science beginning with MATH 136 will be required.
- Replace the required electrical engineering course EE 350 with EE 210
 EE 350 was an annual course offered only to ME students. EE 210 is already offered each term to both ME and EE students, providing efficiency to the department while still providing an acceptable level of coverage of circuits and networks for the ME students.

- Delete the currently required courses ME 285 and ME 416 from the program
The experiences of ME 285 have been included in an existing project in ME 200, and thus the course has become redundant. The topics in ME 416 are better covered in a technical elective rather than in a required course.

- Replace the required ME 321 with an additional technical elective for a total of four
The course is similar to ME 416 above in that it is more appropriate as a technical elective. The credit hours will be retained in a new additional technical elective.

- Replace the two upper division lab courses ME 440/445 with new labs ME 332/333
The new lab courses are more efficient and sustainable since they are more closely aligned with existing courses rather than being unrelated standalone courses. Although the topics might be included as an element of a technical elective, they are not required in a typical ME program.

5. Proposed term for implementation and special provisions:

Term: Fall 2013 (intended to appear in 2013-2014 catalog)

6. Dates of prior committee approvals:

Department of Engineering 15 Nov. 2012

OCSE Curriculum Committee _____

University Curriculum Committee _____

University Senate _____

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Create a Temporary Course
(Information Item)**

Contact Person: Joel Lenoir, joel.lenoir@wku.edu, 270-745-6858

1. Identification of proposed course

- 1.1 Course prefix (subject area) and number: ME 332
- 1.2 Course title: Fluid Mechanics Laboratory
- 1.3 Abbreviated course title: Fluid Mechanics Laboratory
- 1.4 Credit hours: 1
- 1.5 Schedule type: B, Lab
- 1.6 Corequisites: ME 330
- 1.7 Course description:

An applied laboratory in the modeling, prediction, and measurement of fluid mechanics components and systems, with emphasis on the preparation of engineering reports, uncertainty analysis, and the experimental design plan process. System level experiments include fluid property measurements, pipe flow and turbomachinery characteristics.

2. Rationale

- 2.1 Reason for offering this course on a temporary basis:
Topical coverage of the to-be suspended ME 440 Thermal Fluid Systems Laboratory is being divided into two labs, coupled to their respective engineering science courses. ME 332 will be coupled in the spring semester to ME 330 Fluid Mechanics. It will also retain some of the design of experiments plan material from ME 440. This offering provides the student with a direct linkage with ME 330 and creates a more integrated and streamlined ME junior year in engineering laboratory practices. The course focuses on fluid mechanics and supports the ABET requirement of a balance between both stems of the curriculum.
- 2.2 Relationship of the proposed course to courses offered in other academic units:
None

3. Description of proposed course

- 3.1 Course content outline
Design of Experiments Plan Topics:
 - Experimental planning
 - Methods of measurement
 - Selection of instrumentation
 - Prediction of uncertainty
 - Analysis of data and results
 - Estimation of error
 - Reporting of experimental results

List of Selected Experiments:

- Viscosity of a fluid
- Fluid flow measurements
- Fluid Bernoulli test bed – conservation of energy
- Impact of a jet – momentum transfer
- Hydrostatic forces on planar and curved surfaces
- Viscous internal flow – laminar and turbulent regimes
- Pump characteristics and similarity
- Wind tunnel (external flow) - lift and drag forces

3.2 Tentative text(s):

No required textbook. Laboratory handouts will be provided. Textbooks used in ME 310 and ME 330 will serve as reference sources for the course.

4. Second offering of a temporary course (if applicable)

4.1 Reason for offering this course a second time on a temporary basis:

The approval of a revision to the ME program curriculum was delayed by the UK ME Department. Therefore, it is necessary to offer this laboratory for a second time on a temporary basis. The approval of all of the ME program curriculum changes is expected in late Fall 2012 or early Spring 2013.

4.2 Term course was first offered: Spring 2012

4.3 Enrollment in first offering: 27

5. Term of Implementation:

6. Dates of review/approvals:

Engineering Department: 15 Nov. 2012

OCSE Curriculum Committee _____

OCSE Dean _____

UCC Chair _____

Provost: _____

Attachment: Course Inventory Form