

**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 cls Dec 5, 2012

UCC Chair _____

Provost: _____

Attachment: Course Inventory Form

ME 332 Fluid Mechanics Laboratory

BIBLIOGRAPHY

A Guide to Writing as an Engineer, Beer and McMurrey, 3rd Edition, 2009, John Wiley and Sons, ISBN 0 0470-41701-0

Experimental Methods for Engineers, Holman, 7th Edition, 2007, McGraw-Hill, ISBN 0-07-366055-8

Thermodynamics - An Engineering Approach, by Cengel and Boles, 7th Edition, McGraw Hill, 2008, ISBN 0-07-352932-X.

Fluid Mechanics, Fundamentals and Applications, Cengel and Cimbala, 2nd Edition, 2006, McGraw-Hill, ISBN: 0-07-352926-5.

LIBRARY RESOURCES, page 1 of 2
Revised April 2008

Date: 10/26/12

Proposed Course Name and Number: ME 332 Fluid Mechanics Laboratory

Current Library holdings in support of the course are:

 adequate inadequate*

 X library resources not needed for course**

* Inadequate library support will NOT delay approval. If support is adequate, additional materials may still be recommended.

** Library is not responsible for supporting course if this option is chosen.

I. Books/Electronic Resources/Other. Please list key titles, whether or not library already owns; attach course reading list, if any; library materials to be placed on reserve; wish list. If reading list not yet compiled, send asap. Attach additional sheet(s) if needed.

II. Key journal titles needed/recommended:

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Please submit tentative course proposal to Liaison Librarian before departmental curriculum committee meeting when proposal will be considered. This form will be signed and returned to proponent within three working days.

Find Your Liaison Librarian: http://www.wku.edu/Library/dlps/lia_dept.htm

Questions or problems?

Contact Jack Montgomery, jack.montgomery@wku.edu Coordinator, Collection Services
Or UCC Library Representative <http://www.wku.edu/ucc/guidelines.html>



Faculty Member Proposing Course

Liaison Librarian

Coordinator, Collection Services

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 201210

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) 201310

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
<u>ME</u>	<u>330</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Prerequisites (See instructions.)

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

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 Juanita Elk Date 04 Dec 12
 Temporary course: College Dean Cheryl Stevens Date 12-5-12
 Graduate Dean _____ Date _____
 Undergraduate Curriculum Committee _____ University Senate _____
 Graduate Council _____

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