**Ogden College of Science and Engineering**

**Office of the Dean**

**745-4449**

**REPORT TO THE UNIVERSITY CURRICULUM COMMITTEE**

Date: April 12, 2012

The Ogden College of Science and Engineering submits the following information items for consideration at the April 2012 UCC meeting:

1. New Business

|  |  |
| --- | --- |
| **Type of item** | **Description of Item & Contact Information** |
| Information | **Create a Temporary Course**  PHYS 215, Physics Learning Assistants  Contact: Scott Bonham, [scott.bonham@wku.edu](mailto:scott.bonham@wku.edu), x56196 |
| Information | **Create a Temporary Course**  ME333, Heat Transfer Laboratory  Contact: Joel Lenoir, [joel.lenoir@wku.edu](mailto:joel.lenoir@wku.edu), x56858 |

Proposal Date: March 6, 2012

**Ogden College of Science and Engineering**

**Department of Physics and Astronomy**

**Proposal to Create a Temporary Course**

**(Information Item)**

Contact Person: Scott Bonham, 270-745-6196, scott.bonham@wku.edu

1. **Identification of proposed course**
   1. Course prefix (subject area) and number: PHYS 215
   2. Course title: Learning Assistants for Physics Courses
   3. Abbreviated course title: Physics Learning Assistants
   4. Credit hours: 1 h
   5. Schedule type: seminar
   6. Prerequisites/corequisites: permission of instructor
   7. Course description: Introduces students to basic theory and practical skills for assisting instructors as Learning Assistants in active engagement physics courses.
2. **Rationale**
   1. Reason for offering this course on a temporary basis: Be offered for Fall 2012
   2. Relationship of the proposed course to courses offered in other academic units: SMED 101 is an introduction to using active engagement in science and math courses, but the focus is preparing students to experience teaching a lesson at the advanced elementary level and not assisting in a college level course. This course is modeled after a course developed at the University of Colorado for providing Learning Assistants with background and skills to assist faculty in active engagement physics courses, so it will have a strong physics focus.
3. **Description of proposed course**
   1. Course content outline
      * Five principles of effective physics instruction
      * Discussion techniques-univocal/dialogic discourse
      * Classroom discourse and Bloom’s Taxonomy
      * Cognitive studies and teaching physics
      * Student conceptions in physics and formative assessment
      * Resource perspectives in physics
      * Cooperative learning
      * Problem solving strategies
      * Argumentation and metacognition
      * Nature of science
      * Qualities of an effective teacher
   2. Tentative text(s)

R. Knight, *Five Easy Lessons: Strategies for Successful Physics Teaching*, (Addison Wesley, San Francisco, 2004)

Course packet of readings

1. **Dates of review/approvals:**

Physics and Astronomy Department 3/14/2012

OCSE Curriculum Committee 4/5/2012\_\_\_\_

OCSE Dean

UCC Chair

Provost:

**Attachment: Course Inventory Form**

Proposal Date: 3/27/12

**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. Course prefix (subject area) and number: ME333
  2. Course title: Heat Transfer Laboratory
  3. Abbreviated course title: Heat Transfer Laboratory
  4. Credit hours: 1
  5. Schedule type: B, Lab
  6. Corequisites: ME325
  7. Course description:

An applied laboratory demonstrating physical concepts of the various modes of heat transfer, as well as modeling and prediction of heat transfer devices or systems. The lab will enhance the design component of the ME325 course, providing a structured environment for the application of heat transfer principles to actual problems.

**2. Rationale**

* 1. Reason for offering this course on a temporary basis:
  2. This course divides of the topical coverage of the existing ME440 into two labs coupled to their respective engineering science courses. ME333 will be coupled in the fall semester to ME325. It will also retain some of the Design of Experiments Plan material from ME440. The offering provides the student with a direct linkage with ME325 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 to both stems of the curriculum.
  3. Relationship of the proposed course to courses offered in other academic units:

Similar laboratory course are offered at numerous institutions as standalone heat transfer laboratories. Other institutions couple a discrete laboratory course with a specific heat transfer engineering science lecture course. The structure of ME333 provides the latter with ample coverage of heat transfer applications and numerical simulations in a controlled laboratory environment coupled with reinforcing lectures on laboratory relevant engineering science topics coincident with ME325. Additionally, it is unique in that instruction on the ME Program Design of Experiments plan is deployed which supports design validation activities in the student’s senior capstone design experience.

**3. Description of proposed course**

3.1 Course content outline

List of Selected Experiments:

* Heat Exchanger Experiment
* Conduction Heat Transfer Experiment
* Convection Heat Transfer Experiment
* Radiation Heat Transfer Experiment
* Analysis using Heat Transfer software

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

Design Project Implementation sessions

3.2 Tentative text(s):

No required textbook. Laboratory handouts will be provided. Textbooks used in ME310 and ME325 will serve as reference sources for the course.

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

* 1. Reason for offering this course a second time on a temporary basis:
  2. Term course was first offered:
  3. Enrollment in first offering:

1. **Term of Implementation:**
2. **Dates of review/approvals:**

**\_\_\_\_\_\_\_\_\_**Department/Division: March 30, 2012\_\_\_\_\_

\_\_\_\_\_\_\_\_\_Curriculum Committee April 5, 2012\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_Dean \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UCC Chair \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Provost: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Attachment: Course Inventory Form**