UNIVERSITY OF KENTUCKY
APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

1. Submitted by College of ___________________________ Date 9/15/05
   Department/Division offering course Chemical & Materials Engineering

2. Changes proposed:
   (a) Present prefix & number MSE 585 Proposed prefix & number Same
   (b) Present Title Materials Characterization Techniques
       New Title SAME
   (c) If course title is changed and exceeds 24 characters (including spaces), include a sensible title (not to exceed 24 characters) for use on transcripts:

   (d) Present credits: 4 Proposed credits: 3
   (e) Current lecture: laboratory ratio 3/3 Proposed: 3/0
   (f) Effective Date of Change: (Semester & Year) Fall 2006

3. To be Cross-listed as: ___________________________ Prefix and Number ___________________________ Signature: Department Chair

4. Proposed change in Bulletin description:
   (a) This course will present the fundamentals of x-ray and electron beam interactions with solid-state materials. Both elastic and inelastic interactions will be treated, with emphasis on elastic diffraction effects. The laboratory component of the class will provide hands-on learning of the practical aspects of x-ray diffraction, electron diffraction and imaging, and x-ray energy-dispersive spectroscopy. Lecture 3 hours, Laboratory 3 hours per week. Prereq: MSE 301 and Engineering Standing, or graduate status or consent of instructor.

   (b) New description:
       This course will present the fundamentals of x-ray and electron beam interactions with solid-state materials. Both elastic and inelastic interactions will be treated, with emphasis on elastic diffraction effects. The laboratory component of the class will provide hands-on learning of the practical aspects of x-ray diffraction, electron diffraction and imaging, and x-ray energy-dispersive spectroscopy. Prereq: MSE 301 and Engineering Standing, or graduate status or consent of instructor.

   (c) Prerequisite(s) for course as changed: MSE 301 and Engineering Standing, or graduate status or consent of instructor.

5. What has prompted this proposal?
   Upon recommendation from our advisory board, and input from students and faculty, we are dropping the lab component of this course, along with that of four others, and are creating two 3-credit hour labs, to be offered in two consecutive semesters.

6. If there are to be significant changes in the content or teaching objectives of this course, indicate changes:

7. What other departments could be affected by the proposed change?

8. Is this course applicable to the requirements for at least one degree or certificate at the University of Kentucky? □ Yes □ No

9. Will changing this course change the degree requirements in one or more programs?* □ Yes □ No
   If yes, please attach an explanation of the change.*
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12. If the course is 400G or 500 level, include syllabi or course statement showing differentiation for undergraduate and graduate students in assignments, grading criteria, and grading scales. ☑ Yes □ No

12. Is this a minor change?
   (NOTE: See the description on this form of what constitutes a minor change. Minor changes are sent directly from the Dean of the College to the Chair of the Senate Council. If the latter deems the change not to be minor, it will be sent to the appropriate Council for normal processing.)

13. Within the Department, who should be consulted for further information on the proposed course change?

Name: DR. LYNN JOHN 

Phone Extension: 847-1877

Signatures of Approval:

[Signature]
Department Chair

[Signature]
Dean of the College

[Signature]
Date 9/20/05

[Signature]
Date 11/9/05

[Signature]
Date 10/20/05

Date of Notice to the Faculty

**Undergraduate Council

**Graduate Council

**Academic Council for the Medical Center

**Senate Council

**If applicable, as provided by the Rules of the University Senate.

ACTION OTHER THAN APPROVAL

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The Minor Change route for courses is provided as a mechanism to make changes in existing courses and is limited to one or more of the following:

a. change in number within the same hundred series;
b. editorial change in description which does not imply change in content or emphasis;
c. editorial change in title which does not imply change in content or emphasis;
d. change in prerequisite which does not imply change in content or emphasis;
e. cross-listing of courses under conditions set forth in item 3.0;
f. correction of typographical errors. [University Senate Rules, Section III - 3.1]

Rev 3/04
Differentiation for Graduate and Undergraduate Students

All graduate students will complete the same homework, exams, classroom assignments, and short reports required of the undergraduates in the class. In addition, graduate students will be required to submit a comprehensive report on an assigned topic.