APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

1. Submitted by College of Arts & Sciences
   Department/Division offering course Department of Chemistry
   Date January 23, 2002

2. Changes proposed:
   (a) Present prefix & number CHE 625 Proposed prefix & number CHE 625
   (b) Present Title Optical Methods of Analysis
       New Title Spectrochemical Analysis
   (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: N/A
   (d) Present credits: 3 Proposed credits: 3
   (e) Current lecture: laboratory ratio 2 cr:1 cr Proposed: 3 cr:0 cr
   (f) Effective Date of Change: (Semester & Year) Fall 2002

3. To be Cross-listed as: N/A Prefix and Number Signature: Department Chair

4. Proposed change in Bulletin description:
   (a) Present description (including prerequisite(s):
       An intensive study of the theory, instrumentation, and analytical applications of modern atomic and molecular spectrometric methods. Lecture, two hours; laboratory three hours.
   (b) New description:
       An intensive study of the theory, instrumentation, and analytical applications of modern atomic and molecular spectrometric methods.
   (c) Prerequisite(s) for course as changed: CHE 522 or consent of instructor.

5. What has prompted this proposal?
   Most modern instrumentation is so automated and/or computer-controlled that it provides much less pedagogical value than before. Additional lecture will profit students more.

6. If there are to be significant changes in the content or teaching objectives of this course, indicate changes:
   The overall goal of the basic course is the same. The significant change in content is removal of formal laboratory experience as part of the course. Most students now use instrumentation much more in labs as undergraduates or as part of their research.

7. What other departments could be affected by the proposed change?
   None. Only very rarely over the past 3 decades has a non-Chemistry major enrolled.

8. Will changing this course change the degree requirements in one or more programs?*
   [ ] Yes [ ] No
   If yes, please attach an explanation of the change.*

9. Is this course currently included in the University Studies Program?
   [ ] Yes [ ] No
   If yes, please attach correspondence indicating concurrence of the University Studies Committee.

10. If the course is a 100-200 level course, please submit evidence (e.g., correspondence) that the Community College System has been consulted.

*NOTE: Approval of this change will constitute approval of the program change unless other program modifications are proposed.
11. Is this a minor change?

☐ Yes  ☑ No

(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.)

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

Name: Dr. James E. O'Reilly  Phone Extension: 257-7077 or 257-2411

Signatures of Approval:

[Signatures]

Date: 21 March 02

**Undergraduate Council

**Graduate Council

**Academic Council for the Medical Center

**Senate Council

Date of Notice to University Senate

**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]
SPECTROCHEMICAL ANALYSIS (An illustrative course syllabus)

Lectures: 3 hr., 10 MWF, 3 Credits.

Class handout materials and Library reference books.

Professor: J. E. O'Reilly 110 Chemistry-Physics, 257-7077, jeorei0@pop.uky.edu or 315 Patterson Tower, 257-2411, oreilly@pop.uky.edu

Office Hours: 11:00 MWF, or by appointment.

Tests: Three Midterm Exams plus the Final Exam
[Exact dates, times, and locations of the Exams here]

Grading: Three Midterm Exams 70%, Final Exam 30%
A final percentage grade in the class of 90%, 80%, and 70% will guarantee an A, B, or C letter grade for the course. Actual cut-off percentages in past years have been typically about 3-5% lower than the above. Ideally, grade cut-offs are made where there are significant gaps or differences in students’ course performance.

Important Dates: (From a previous semester)
Tue, Aug 31 Last day to enter a class.
Wed, Sept 15 Last day to Drop a class without it appearing on transcript; to change grading options (P/F, audit/credit).
Fri, Oct 22 Last day to Withdraw from a course. After this date a student may drop a course only may drop a course only by a petition for "urgent reasons" such as illness, and by approval of the Dean. Until this day, the student is assumed to be passing.
Fri, Dec 10 Last day of classes.

Test Policy: A student is permitted to bring a single 8½ x 11” sheet of paper filled with whatever formulas, notes, prayers, etc. to an in-class midterm exam as an aid (two sheets to the 2nd, 3 sheets to the 3rd and the Final). A student is permitted to use a non-programmable calculator for exams. Calculators may not be shared.

Academic Dishonesty: Proven academic dishonesty (cheating) in any form or manner will result in automatic failure of the course; the E grade cannot be removed by use of a Repeat Option. Additional sanctions are possible. The procedures detailed in the current version of the *Student Rights and Responsibilities* manual (see http://www.uky.edu/StudentAffairs/Code/) will be carefully followed by the instructor and the Department of Chemistry. If you have questions as to what may constitute academic dishonesty, please ask the instructor.
SPECTROCHEMICAL ANALYSIS

[Illustrative Topical Lecture Outline. Exact topics, ordering, and emphasis will vary somewhat from instructor to instructor.]

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<th>Topic</th>
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<td>I. Prologue</td>
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<td>II. Introduction to Optical Methods</td>
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<td>• Sources</td>
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<td>• Lasers</td>
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<td>• Wavelength Sorters/Selectors</td>
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<td>• Detectors</td>
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<td>III. Atomic/Elemental Methods of Analysis</td>
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<td>• Atomic Fluorescence</td>
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<td>• X-Ray Methods</td>
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<td>IV. Molecular Methods of Analysis</td>
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<td>• UV/Visible Absorption</td>
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<td>• UV/Visible Fluorescence</td>
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<td>• Infrared Absorption</td>
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<td>• Fourier Transform Spectroscopy</td>
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<td>• Raman</td>
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<td>• Nuclear Magnetic Resonance</td>
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<td>V. Analytical Mass Spectrometry</td>
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<td>• Magnetic and Double-focusing</td>
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<td>• Quadrupole</td>
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<td>• Others</td>
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<td>VI. Surface-Analysis Methods</td>
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<td>• Optical Reflectance Spectroscopy</td>
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<td>• Photoacoustic Spectroscopy</td>
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<td>• Secondary-Ion and Ion-Scattering Mass Spectrometry</td>
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<td>• Electron Spectroscopy</td>
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<td>• Backscattering Spectrometry</td>
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ARTS AND SCIENCES COLLEGE COUNCIL/CURRICULUM COMMITTEE

INVESTIGATOR REPORT

INVESTIGATING BODY  Area A, Shelley Steiner  COURSE, MAJOR or DEGREE  CHE 625  (department or college)

DATE FOR COUNCIL REVIEW  4-9-02  CATEGORY: NEW, CHANGE, DROP

INSTRUCTIONS: This completed form will accompany the course application to the Graduate/Undergraduate Council(s) in order to avoid needless repetition of investigation. The following questions are included as an outline only. Be as specific and as brief as possible. If the investigation was routine, please indicate this. The term "course" is used to indicate one course, a series of courses or a program, whichever is in order. Return the form to Phil Harling, Associate Dean, 231 Patterson Office Tower for forwarding to the Council(s). ATTACH SUPPLEMENT IF NEEDED.

1. List any modifications made in the course proposal as submitted originally and why.

   None

2. If no modifications were made, review considerations that arose during the investigation and the resolutions.

3. List contacts with program units on the proposal and the considerations discussed therein.

   Area A Committee Member

4. Additional information as needed.

   None

5. A&S Area A, Natural & Mathematical Sciences Curriculum Committee Recommendation:

   [ ] APPROVE, [ ] APPROVE WITH RESERVATION, OR [ ] DISAPPROVE

6. A&S Council Recommendation:

   [ ] APPROVE, [ ] APPROVE WITH RESERVATION, OR [ ] DISAPPROVE

7. [Signature]

   A&S Council Investigator, Dr. Shelley Steiner

   Date: 4-9-02

File: InvestigatorRpt