Course Information

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FEB 26 2014
OFFICE OF THE SENATE COUNCIL

Date Submitted: 10/30/2013

Current Prefix and Number: CHE - Chemistry , CHE 522 INSTRUMENTAL ANALYSIS

Other Course:

Proposed Prefix and Number: CHE 422

What type of change is being proposed?

Major Change

Should this course be a UK Core Course? No

1. General Information

a. Submitted by the College of: College of Arts &Sciences

b. Department/Division: Chemistry

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: Arthur Cammers

Email: a.cammers@uky.edu

Phone: 8593238977

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

f. Requested Effective Date

Semester Following Approval: Yes OR Effective Semester:

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: N/A

b. Full Title: INSTRUMENTAL ANALYSIS

Proposed Title: INSTRUMENTAL ANALYSIS

c. Current Transcript Title: INSTRUMENTAL ANALYSIS

Proposed Transcript Title: INSTRUMENTAL ANALYSIS

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

LECTURE: 2

LABORATORY: 6

Proposed Meeting Patterns

LECTURE: 2

LABORATORY: 6

f. Current Grading System: ABC Letter Grade Scale

Proposed Grading System: PropGradingSys

g. Current number of credit hours: 4

Proposed number of credit hours: 4

h. Currently, is this course repeatable for additional credit? No

Proposed to be repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester? No

2i. Current Course Description for Bulletin: The theory and application of instrumental methods of analysis. Lecture, two hours; laboratory, six hours.

Proposed Course Description for Bulletin: The theory and application of instrumental methods of analysis. Lecture, two hours; laboratory, six hours.

2j. Current Prerequisites, if any: Prereq: A physical chemistry course at or above the 400 level.

Proposed Prerequisites, if any: Prereq: A physical chemistry course at or above the 400 level.

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component: No Change

3. Currently, is this course taught off campus? No

Proposed to be taught off campus? No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed? No

If YES, explain and offer brief rational:

5a. Are there other depts. and/or pgms that could be affected by the proposed change? No

If YES, identify the depts. and/or pgms:

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1.How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2.How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3.How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4.Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5.How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6.How do course requirements ensure that students make appropriate use of learning resources?

7.Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8.How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)?

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10.Does the syllabus contain all the required components? NO

11.I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|MEIER|Mark S Meier|CHE 522 CHANGE Dept Review|20130615

SIGNATURE|RHANSON|Roxanna D Hanson|CHE 522 CHANGE College Review|20131106

SIGNATURE|JMETT2|Joanie Ett-Mims|CHE 522 CHANGE Undergrad Council Review|20140226

Courses | Request Tracking

Course Change Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Generate R

Open in full window to print or save

Attachments:

Browse... Upload File

	ID	Attachment
Delete	3084	CHE 422 Syllabus revised.docx

First 1 Last

Select saved project to retrieve... Get New

NOTE: Start form entry by choosing the Current Prefix and Number
(*denotes required fields)

	Current Prefix and Number:	CHE - Chemistry CHE 522 INSTRUMENTAL ANALYSIS	*Proposed Prefix & Number:*	CHE 422

* What type of change is being proposed?

- ☑ Major Change
- ☐ Major – Add Distance Learning
- ☐ Minor - change in number within the same hundred series, excep 799 is the same "hundred series"
- ☐ Minor - editorial change in course title or description which does change in content or emphasis
- ☐ Minor - a change in prerequisite(s) which does not imply a chang course content or emphasis, or which is made necessary by the elim or significant alteration of the prerequisite(s)
- ☐ Minor - a cross listing of a course as described above

Should this course be a UK Core Course? ○ Yes ◉ No

If YES, check the areas that apply:

☐ Inquiry - Arts & Creativity	☐ Composition & Communications - II
☐ Inquiry - Humanities	☐ Quantitative Foundations
☐ Inquiry - Nat/Math/Phys Sci	☐ Statistical Inferential Reasoning
☐ Inquiry - Social Sciences	☐ U.S. Citizenship, Community, Diversity
☐ Composition & Communications - I	☐ Global Dynamics

1. General Information

a. Submitted by the College of: College of Arts & Sciences — Submission Date: 10/30/2013

b. Department/Division: Chemistry

c.* Is there a change in "ownership" of the course?

○ Yes ◉ No If YES, what college/department will offer the course instead? Select...

e.* * Contact Person Name: Arthur Cammers — Email: a.cammers@uky.edu — Phone: 8593238977

* Responsible Faculty ID (if different from Contact) — Email: — Phone:

f.* Requested Effective Date: ☑ Semester Following Approval — OR — Specific Term:

2. Designation and Description of Proposed Course.

a. Current Distance Learning(DL) Status:

- ◉ N/A
- ○ Already approved for DL*
- ○ Please Add
- ○ Please Drop

*If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box) that the proposed chang affect DL delivery.

b.	Full Title:	INSTRUMENTAL ANALYSIS	*Proposed Title: **	INSTRUMENTAL ANALYSIS

c.	**Current Transcript Title (if full title is more than 40 characters):**	INSTRUMENTAL ANALYSIS			
c.	*Proposed Transcript Title (if full title is more than 40 characters):*	INSTRUMENTAL ANALYSIS			
d.	**Current Cross-listing:**	☑ N/A	OR	Currently[3] Cross-listed with (Prefix & Number):	none
	Proposed – ADD[3] Cross-listing (Prefix & Number):				
	Proposed – REMOVE [3,4] Cross-listing (Prefix & Number):				

e. **Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours [5] for each meeting pattern**

Current:	Lecture: 2	Laboratory[5]: 6	Recitation:	Discussion:	Indep. Study:
	Clinical:	Colloquium:	Practicum:	Research:	Residency:
	Seminar:	Studio:	Other:	Please explain:	
*Proposed: **	Lecture: 2	Laboratory[5]: 6	Recitation:	Discussion:	Indep. Study:
	Clinical:	Colloquium:	Practicum:	Research:	Residency:
	Seminar:	Studio:	Other:	Please explain:	

f.	**Current Grading System:**	ABC Letter Grade Scale		
	*Proposed Grading System:**	◉ *Letter (A, B, C, etc.)* ○ *Pass/Fail* ○ *Medicine Numeric Grade (Non-medical students will receive a letter grade)* ○ *Graduate School Grade Scale*		
g.	**Current number of credit hours:**	4	*Proposed number of credit hours:**	4
h.*	**Currently, is this course repeatable for additional credit?**			○ Yes ◉ No
*	*Proposed to be repeatable for additional credit?*			○ Yes ◉ No
	If YES:	*Maximum number of credit hours:*		
	If YES:	*Will this course allow multiple registrations during the same semester?*		○ Yes ◉ No

i. **Current Course Description for Bulletin:**

The theory and application of instrumental methods of analysis. Lecture, two hours; laboratory, six hours.

* *Proposed Course Description for Bulletin:*

The theory and application of instrumental methods of analysis. Lecture, two hours; laboratory, six hours.

j. **Current Prerequisites, if any:**

Prereq: A physical chemistry course at or above the 400 level.

* *Proposed Prerequisites, if any:*

*

	Prereq: A physical chemistry course at or above the 400 level.	
k.	**Current Supplementary Teaching Component, If any:**	○ Community-Based Experience ○ Service Learning ○ Both
	Proposed Supplementary Teaching Component:	○ Community-Based Experience ○ Service Learning ○ Both ◉ No Change
3.	**Currently, is this course taught off campus?**	○ Yes ◉ No
*	*Proposed to be taught off campus?*	○ Yes ◉ No
	If YES, enter the off campus address:	
4.*	**Are significant changes in content/student learning outcomes of the course being proposed?**	○ Yes ◉ No
	If YES, explain and offer brief rationale:	
5.	**Course Relationship to Program(s).**	
a.*	**Are there other depts and/or pgms that could be affected by the proposed change?**	○ Yes ◉ No
	If YES, identify the depts. and/or pgms:	
b.*	**Will modifying this course result in a new requirement[2] for ANY program?**	○ Yes ◉ No
	If YES[2], list the program(s) here:	
6.	**Information to be Placed on Syllabus.**	
a.	☐ Check box if changed to 400G or 500.	If changed to 400G- or 500-level course you must send in a syllabus and *you must include the differentiation* between under and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grad criteria in the course for graduate students. (See *SR 3.1.4.*)

[1] See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair.* If Chair deems the change as "not minor," the form will b appropriate academic Council for normal processing and contact person is informed.
[2] Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
[3] Signature of the chair of the cross-listing department is required on the Signature Routing Log.
[4] Removing a cross-listing does not drop the other course – it merely unlinks the two courses.
[5] Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting gene least two hrs per wk for a semester for 1 credit hour. (See *SR 5.2.1.*)
[6] You must *also* submit the Distance Learning Form in order for the course to be considered for DL delivery.
[7] In order to change a program, a program change form must also be submitted.

Submit as New Proposal Save Current Changes

"Due to increasing numbers of undergraduate majors in the Chemistry Department there is an increasing need for TAs in the upper division courses. However, graduate students cannot serve as TAs in classes that members of their cohort could take for credit. The following courses were targeted for course number changes to allow the instructors easier access to graduate-student TA work hours.

The courses under consideration are very rarely taken by graduate students. These changes will have little or no impact on UK Chemistry's Graduate Program and should have little impact or no impact on other graduate programs on campus."

Department of Chemistry - University of Kentucky

CHE 422 - Instrumental Analysis

2013 Fall Semester

Lectures: 2 hours, 12:30 p.m.-1:20 p.m., Tuesday and Thursday, CP-222

Laboratory: 6 hours, 1:30 p.m. - 4:30 p.m., Tuesday and Thursday, CP-114

Course Material:
1. Textbook: Skoog, Holler, Crouch, Principles of Instrumental Analysis, 6th Edition, Brooks/Cole, 2006
2. Research articles

Professor: Dr. Doo Young Kim, Office: CP-101
Office Phone number: 257-5597
E-mail address: dooyoung.kim@-uky.edu

Office Hours: (1) 11:30 a.m. – 12:30 p.m., Tuesday and Thursday
(2) By appointment

Course Description : 4 credits. A study of the theory and application of instruments in chemical analysis for the identification of substance and the determination of sample purity. **Prerequisites:** A physical chemistry course at or above the 400 level.

Student Learning Outcomes:

After completing this course, the student will be able to:
1. understand the fundamental principles of operation of modern analytical instrumentation
2. connect modern molecular theory to the use and operation of chemical instrumentation
3. make efficient use of these measurement tools in chemical analysis
4. design analytical instrumental methods to determine purity of material samples
5. design analytical instrumental to identify components in samples.
6. understand and control for error in instrumental chemical analytic procedures
7. criticize published analytical procedures.

Exams:
Exam I: Thur., October 10
Exam II: Thur., November 14
Exam III: Thur., December 19 **1:00 PM**

Grading Policy:

	Lecture	
Exam I		16.6 %
Exam II		16.7 %

	Exam III	16.7 %
Laboratory	One Formal Reports	15.0 %
	Seven Regular Reports	35.0 %

(For further details see syllabus for the lab)

Grading Scale:

The final grade will be determined as follows: Anyone getting 90% or above will receive an **A** grade; between 80 to 90 % a **B** grade; between 70 to 80 % a **C** grade; between 60 to 70 % a **D** grade, less than 60 % an **E** grade.
***Mid-term grades** will be posted in myUK by the deadline established in the Academic Calendar (http://www.uky.edu/Registrar/AcademicCalendar.htm)*

Policy on Unexcused Absences:

Attendance is required for this course. Often, the attendance will be checked. Also, often a short quiz will be conducted and the results will be included for the evaluation. Please notify me as soon as possible when you predict you can't attend the class.

Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.
Missed Work due to Absence: SR 5.2.4.2 allows students one week to make up missed work after an excused absence. Arrangements need to be made with the instructor as soon as possible.

No computer or cell phone usage during the class.

Important Dates:

Wed., September 18	- Last day to drop a course without it appearing on the transcript
Fri., November 8	- Last day to withdraw from a course

Students Rights and Responsibilities:

Policies related to excused absences, cheating/plagiarism, withdrawal, incomplete grade, and exams can be found in your copy of "Students Rights and

Responsibilities". As students and faculty, we are all responsible for adhering to these policies.

If you have a documented disability that requires academic accommodations, please see me as soon as possible. In order to receive accommodations in this course, you must provide me with a **Letter of Accommodation** from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Academic Dishonesty:

Academic dishonesty or cheating of any kind will simply not be tolerated. This is a serious offense and the instructor will make every effort to ensure that the punishment is immediate and severe. Although each student must write up his/her lab report completely independently, the use of others' data is permissible, if this fact is made clear in the report by proper scientific acknowledgment and/or referencing. Data obtained by "partners" in the lab are common to both. Discussion of the experiment, the results, and the calculations, is encouraged; but the writing is to be done independently.

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: http://www.uky.edu/Ombud. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of Student Rights and Responsibilities
http://www.uky.edu/StudentAffairs/Code/part2.html
states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or

something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability:
If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

CHE 422 - Chemical Instrumentation

COURSE CONTENT

Department of Chemistry

University of Kentucky

2013 Fall Semester

Topic	Date
Chap. 1 Introduction	9/3 & 9/5
Chap. 5 Signals and Noise	9/10 & 9/12
Chap. 6 Properties of Light	9/17
Chap. 7 Optical Components	9/19
Chap. 13/14 Absorption Spectroscopy	9/24 & 9/26
Chap. 15 Fluorescence	10/1 & 10/3
Chap. 16/17 IR spectroscopy	10/8 & 10/15
Exam I	**10/10**
Chap. 8 Atomic Spectroscopy	10/17
Chap. 9 Atomic Abs. Spectroscopy	10/22
Chap. 10 Atomic Emiss. Spectroscopy	10/24
Chap. 22 Intro. To Electrochemistry	10/29 & 10/31
Chap. 23 Potentiometry	11/5
Chap. 25 Voltammetry	11/7
Exam II	**11/12**
Chap. 26 Intro. to Separations	11/14 & 11/19
Chap. 27 Gas Chromatography	11/21
Chap. 28 Liquid Chromatography	11/26
Chap. 30 Capillary Electrophoresis	12/3 & 12/5
Chap. 22 Intro. to Mass Spec.	12/10 & 12/12
Exam III	**12/19**

APPROVED BY GC 11/6/14