

APPLICATION FOR NEW COURSE

1. Submitted by the College of Arts and Science Date: November 11, 2007

Department/Division proposing course: Chemistry Department

2. Proposed designation and Bulletin description of this course:

a. Prefix and Number CHE 103

b. Title Chemistry for Health Professionals

If title is longer than 24 characters, write a sensible title (24 characters or less) for use on transcripts:

CHE FOR HEALTH PROF

c. Courses must be described by at least one of the categories below. Include the number of actual contact hours per week for each category, as applicable.

CLINICAL COLLOQUIUM DISCUSSION LABORATORY LECTURE
 INDEPEND. STUDY PRACTICUM RECITATION RESEARCH RESIDENCY
 SEMINAR STUDIO OTHER – Please explain: _____

d. Please choose a grading system: Letter (A, B, C, etc.) Pass/Fail

e. Number of credit hours: 4

f. Is this course repeatable? YES NO If YES, maximum number of credit hours: _____

g. Course description:

A study of the basic concepts of general, organic, and biological chemistry. Topics include electronic structure of atoms and molecules, periodicity of the elements, stoichiometry, states of matter, kinetics, equilibria, acids and bases, organic functional groups, stereochemistry, carbohydrates, lipids, proteins, and enzymes. Topics are presented with an emphasis on application to the allied health professions.

h. Prerequisite(s), if any:

2 yrs high school algebra and math ACTE of 19 or above, or Math placement test, or completion of MA 108R.

i. Will this course be offered through Distance Learning? YES NO

If YES, please circle one of the methods below that reflects how the majority of the course content will be delivered:

Internet/Web-based Interactive video Extended campus Kentucky Educational Television (KET/teleweb) Other

Please describe "Other": _____

3. Teaching method: N/A Community-Based Experience Service Learning Component Both

4. To be cross-listed as: _____
Prefix and Number

Signature of chair of cross-listing department

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5. Requested effective date (term/year): Fall / 2008
6. Course to be offered (please check all that apply): Fall Spring Summer
7. Will the course be offered every year? YES NO
If NO, please explain: _____
8. Why is this course needed?
The Nursing Program would like to change their chemistry prerequisite course from the two semester sequence of CHE104/108 to a one semester course.

9. a. By whom will the course be taught? Chemistry Faculty
- b. Are facilities for teaching the course now available? YES NO
If NO, what plans have been made for providing them?

10. What yearly enrollment may be reasonably anticipated?
300 per year.
11. a. Will this course serve students primarily within the department? Yes No
- b. Will it be of interest to a significant number of students outside the department? YES NO
If YES, please explain.
Pre-nursing students (see 8.)
12. Will the course serve as a University Studies Program course[†]? YES NO
If YES, under what Area? Natural Science
[†]AS OF SPRING 2007, THERE IS A MORATORIUM ON APPROVAL OF NEW COURSES FOR USP.
13. Check the category most applicable to this course:
- traditional – offered in corresponding departments at universities elsewhere
 - relatively new – now being widely established
 - not yet to be found in many (or any) other universities
14. Is this course applicable to the requirements for at least one degree or certificate at UK? Yes No
15. Is this course part of a proposed new program? YES NO
If YES, please name: _____
16. Will adding this course change the degree requirements for ANY program on campus? YES NO
If YES[‡], list below the programs that will require this course:

APPLICATION FOR NEW COURSE

Nursing

[‡]In order to change the program(s), a program change form(s) must also be submitted.

17. The major teaching objectives of the proposed course, syllabus and/or reference list to be used are attached.
18. Check box if course is 400G or 500. If the course is 400G- or 500-level, you must include a syllabus showing differentiation for undergraduate and graduate students by (i) requiring additional assignments by the graduate students; and/or (ii) the establishment of different grading criteria in the course for graduate students. (See SR 3.1.4)
19. Within the department, who should be contacted for further information about the proposed new course?

Name: Kim Woodrum Phone: 257-7082 Email: kwood2@email.uky.edu

20. Signatures to report approvals:

12/13/07	Steven W. Yates
DATE of Approval by Department Faculty	Reported by Department Chair
2/19/08	Leonidas Bechus
DATE of Approval by College Faculty	Reported by College Dean
3/18/08	S. Gill
* DATE of Approval by Undergraduate Council	Reported by Undergraduate Council Chair
	/
* DATE of Approval by Graduate Council	Reported by Graduate Council Chair
	/
* DATE of Approval by Health Care Colleges Council (HCCC)	Reported by Health Care Colleges Council Chair
* DATE of Approval by Senate Council	Reported by Office of the Senate Council
* DATE of Approval by University Senate	Reported by Office of the Senate Council

*If applicable, as provided by the *University Senate Rules*. (<http://www.uky.edu/USC/New/RulesandRegulationsMain.htm>)

APEX Review for Course or Program Proposal

Changes in the major and/or minor requirements affect our current electronic degree audit system, APEX. How will the degree audit in APEX be affected by the course or program proposal? Please show in detail the changes and how they would impact major or minor requirements in your department or the College requirements if the proposal is approved. If you are unsure as to how to answer this question, please contact Sean Cooper in the Arts & Sciences Advising Center at sean.cooper@uky.edu or 257-8712 before filing this proposal.

Proposal:	Add new course CHE103, Chemistry for Health Professionals
Impact on department major:	None. (Course is intended for students in College of Nursing)
Impact on department minor:	None.
Impact on College requirements:	None
Director of Undergraduate Studies: Signature of department DUS required:	<u>Conan T. Beck</u> 22 Jan 08
Who should be consulted for further information on the proposed change?	Name: Dr. Kim Woodrum E-mail: kwood2@uky.edu Phone: 7-7681

1/13/08

ARTS AND SCIENCES
EDUCATIONAL POLICY COMMITTEE
INVESTIGATOR REPORT

<http://www.as.uky.edu/Admin/faculty/viewdocs/summary/>

INVESTIGATING AREA: Natural & Math. Sci. COURSE, MAJOR, DEGREE or PROGRAM: CHE 103

DATE FOR EPC REVIEW: _____ 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 Leonidas Bachas Associate Dean, 275 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.
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.

4. Additional information as needed. *Change - of - Program from Nursing needs to be attached to course proposal.*
5. A&S Area Coordinator Recommendation:

APPROVE, APPROVE WITH RESERVATION, OR DISAPPROVE

6. A&S Education Policy Committee Recommendation:

APPROVE, APPROVE WITH RESERVATION, OR DISAPPROVE

7. Ruth Beattie Date: Feb 19, 2008
A&S Educational Policy Committee,
Ruth Beattie rebeat1@uky.edu 257-7641

File: \InvestigatorRpt

CHEMISTRY FOR HEALTH PROFESSIONALS

Textbook: **General, Organic, and Biochemistry**, Fifth Edition, by Denniston, Topping and Caret. McGraw Hill Publishing, 2007.

Instructor:

CP-139

Office: CP-23

DATES	CHAPTER	TOPICS	SUGGESTED HOMEWORK FROM TEXTBOOK
	1	Chemistry: Methods and Measurement	
	2	Atomic Structure	
	3	Elements, Atoms, Ions and the Periodic Table	
	4	Structure and Properties of Ionic and Covalent Compounds	
	5	Calculations and the Chemical Equation	
	6	States of Matter	
	7	Reactions and Solutions	
	8	Chemical and Physical Change	
	9	Acid-Base and Oxidation-Reduction Reactions	
	10	Nuclear Chemistry	
	11	Intro to Organic Chemistry/Alkanes	
	12	Alkenes, Alkynes and Aromatics	
	13	Alcohols, Phenols, Thiols, and Ethers	
	14	Aldehydes and Ketones	
	15	Carboxylic Acids and Derivatives	
	16	Amines and Amides	
	17/21	Carbohydrates	

DATES	CHAPTER	TOPICS	SUGGESTED HOMEWORK FROM TEXTBOOK
	18	Lipids and Their Functions	
	19	Proteins	
	20	Enzymes	

109 Tentative Homework Due Dates

Introduction Assignment		
Chapter 1		
Chapter 2		
Chapter 3		
Chapter 4		
Chapter 5		
etc.		

Course/Section	Days	Meeting Time	Instructor	Room
				CP-139

PAGERS, CELLPHONES AND ANY OTHER FORM OF ELECTRONIC COMMUNICATION DEVICE MUST BE TURNED OFF DURING CLASS AND ARE PROHIBITED DURING EXAMS.

CHE 103

CHEMISTRY FOR HEALTH PROFESSIONALS

(4)

A study of the basic concepts of general, organic and biological chemistry. Topics include electronic structure of atoms and molecules, periodicity of the elements, stoichiometry, states of matter, kinetics, equilibria, acids/bases, organic functional groups, stereochemistry, carbohydrates, lipids, proteins and enzymes. Topics covered with an emphasis on application to the allied health professionals.

IMPORTANT DATES

Last day to add any course -

Last day to drop a course without its appearing on your transcript - . This is also the last day to change the grading option (letter grade to pass/fail or vice versa; credit to audit or vice versa).

Last day to withdraw from a course -

Designated University Holidays -

MAJOR RELIGIOUS HOLIDAYS

Students are responsible for notifying the General Chemistry secretary, Ms. Geri Gerke (CP-125) in writing of anticipated absences due to their observance of such holidays. Notification must be received no later than the last day for adding a class (xxxxxx).

STUDENTS WITH DISABILITIES

Any student with a certified disability should provide this information to the General Chemistry secretary, Ms. Geri Gerke (CP-125) no later than the last day for adding a class (28 August).

INFORMATION CARD (FORM GC-1.1):

All students shall complete and return to the instructor the information card provided. This satisfies University Senate rules regarding intent to attend this course. Failure to submit this card within the first two class periods shall be cause for removal from the class roll.

EXAMINATIONS

Each examination will last 75 minutes during class time, as scheduled in the course outline. You must bring your student ID card (or other identification with a picture, preferably in color), one or more #2 pencils, and your own simple scientific calculator (with exponents and logarithms) to exams 1, 2 and the final. Graphing calculators, calculator with large memory banks, and those that permit the entering of letters are **NOT** permitted. No TI-80 or higher series graphing calculator is permitted. The instructor has the final say as to what is acceptable. If you have any questions, ask your instructor. All materials (backpacks, pagers, phones, and other electronic devices) must be left at the front of the room during the exams. Your seating assignment for the examinations will be posted on Blackboard 1-2 days prior to the examination. This information will be located under "Course Information", "Exam Materials".

FINAL EXAMS

The final exam is xxxx. If you miss the final, if you are excused, and if you are in passing standing in the course you will receive an "I" for the course and you will make up the exam with the next semester's final. If you are not in passing standing and if you miss the final exam, you will receive an "E" grade for the course.

GRADING IN THE COURSE

Three examinations (each of 75 minutes duration) and a Final Examination (of two hours duration, subdivided into four sections that correspond to the three mid-term examinations and the material following the third examination) will be given in this course. Grades on these examinations and for the course will be assigned on the following basis: A: 90.0 - 100; B: 80.0 - 89.9; C: 70.0 - 79.9; D: 60.0 - 69.9; and E: below 59.9.

On the final examination, if the grade on that section corresponding to the mid-term examination with **THE LOWEST GRADE** is improved, that section grade will be substituted for the original mid-term examination grade.

The final grade for the course will be calculated as follows:

Three examinations, at 20% each	.....	60%
Class Participation	.....	5%
Assigned Homework	.....	10%
Comprehensive Final Examination	.....	25%
Total	.....	100%

The department adheres rigorously to University policy with respect to awarding grades of (incomplete) - see "Student Rights and Responsibilities," by going to <http://www.uky.edu/StudentAffairs/Code/>. Go to Part II: Rules of University Senate, Section V, 5.1.3.2.

EXTRA CREDIT OPPORTUNITIES

You will be given the opportunity to earn up to 10 "Bonus Points" throughout the semester. Each Bonus Point will add 0.1% to your final average. For example, if you earn 7 Bonus Points and your average at the end of the semester is 89.3, your new average will be 90.0 and you have an "A" for the semester. Bonus Points will be given for attending the General Chemistry Learning Center and as described by your individual instructor. You may not earn Bonus Points after the final examination.

MAKE-UP EXAMINATIONS

There will be no separate make-up examinations for the three examinations. However, for those students who miss one examination with a legitimate, documented excuse under the guidelines outlined on a separate sheet posted on the General Chemistry Bulletin Board (outside of CP-139) *AND WHO OBTAIN PERMISSION WITHIN THE TIME LIMIT INDICATED ON THE EXCUSED ABSENCE POLICY FORM POSTED*, the score on a section of the Final Examination pertaining to the material of the missed examination will be converted to a percentage and substituted for the score on the missed examination. *PLEASE CAREFULLY NOTE BOTH THE TIME REQUIREMENTS AND THE PROCEDURE FOR OBTAINING A LEGITIMATE EXCUSED ABSENCE.* Purchase of airline tickets is **NOT** considered a legitimate reason to be excused from an exam. Don't purchase tickets which conflict with exams. If an exam is missed and is not excused, a zero will be given. This score will be your **LOWEST** grade and will be replaced as described under "Grading in the Course".

CHEATING

The Department of Chemistry considers cheating a very serious offense and we will do everything possible to prevent cheating in this course. The minimum penalty for academic dishonesty is a zero on the assignment at issue. Additional or more severe penalties will be governed by the University regulations on academic dishonesty.

HELP!

The Department of Chemistry will offer the week of the examinations a 50 minute help session for students in CHE 109. Attendance at these help sessions is entirely voluntary. For the Fall 200X semester these help sessions will be from XXXXXXXXXXXXXXXXXXXX. In addition, the Chemistry Department provides a "General Chemistry Learning Center" that is staffed by CHE 115 teaching assistants. The learning center is located in CP-25. The learning center schedule will be posted on the door to CP-25 and in Blackboard soon after the beginning of the semester.

Lecture notes will be posted in Blackboard under "Course Information", "Class Notes".

PERSONAL TUTORS

Tutors for General Chemistry are available. A list of names of Department of Chemistry staff willing to tutor can be obtained from the receptionist in the Chemistry Office (CP-125) soon after the beginning of the semester.

COPYRIGHT

All course material is copyrighted (either by the instructor or others). Therefore, transcribing and then selling, publishing or posting any of the lecture material presented in class is strictly prohibited. This applies particularly to so called "professional" note-taking services and companies that publish such material on the Internet or in written form.

OFFICE HOURS

You are encouraged to make use of your instructor's office hours. Office hours for your CHE 104 instructor

are as follows:

Instructor	Office Hours	Office

You are also welcome to come to the office of the Director of General Chemistry (Dr. K. Woodrum, CP-125, E-mail: kwood2@uky.edu) to discuss matters of policy or to make comments about the course. Dr. Woodrum is normally available Tuesdays and Thursdays by appointment only. You may make an appointment by calling the General Chemistry secretary (Ms. Geri Gerke) at 257-3882.

Blackboard and Homework Instructions

To access Blackboard, go to <http://myuk.uky.edu>. Your username and password is the same as your UK e-mail address and password. **It is your responsibility to log in and not miss assignments.** Ignorance or incompetence will not count as an excuse for missed assignments. Your first assignment is due no later than Friday, xxxxx @ 11:59 PM. Log in right away so any problems can be ironed out before your assignment is due.

Once on Blackboard, click on the course you wish to access. You will use Blackboard to access the following links:

- I. **Announcements:** Current announcements will be displayed on the opening course screen. Be sure to log into Blackboard on a daily basis even if you do not have homework to do, so you can read announcements that the instructor, or Director of General Chemistry has posted for you.
- II. **Homework Assignments:** Assigned Homework will be completed on Blackboard. These assignments count as 15% of your grade.

Click on "Tools & WebAssign", then "WebAssign link".

When logging into WebAssign, you will be prompted to enter an access code. To use WebAssign, you **MUST** purchase the code, though a few days grace period will be granted. The code can be purchased at the bookstore or on-line with a credit card.

Please note the following:

1. WebAssign is a separate website location that comes up in Blackboard. To ensure you know how to use WebAssign, **you need to read the Student Guide!** Disregard 1 and 2 of the guide. (They do not apply to you. You are already registered and logging into Blackboard will log you into WebAssign.) You must take responsibility to know how WebAssign works. The Student Guide, request for assistance and other important information are located at: http://www.webassign.net/info/support/stu_support.html
2. If WebAssign is unable to help you with your issues, contact Dr. Kim Woodrum at kwood2@uky.edu. She will be able to help or direct you to where to get the help you need.
3. The lowest grades of your assignments will be dropped. Therefore, two assignments will be automatically excused through this drop policy for whatever reason, forgetting to do it, missing the due date, a computer malfunction. A percentage score will be calculated for each of the XX homework assignments. The two lowest percentages will be dropped, and the final homework score will be the average of the remaining percentages.
4. To receive an extension on an assignment, you will need to provide legitimate, documented excuses consistent with University policy in order to be granted the manual extension. The documentation must be turned in to Ms. Geri Gerke in the main chemistry office (CP-125)

- within one week of the homework due date. Extensions will not be granted if you view the key.
5. Additional issues that arise will be addressed in the Announcements in Blackboard. Be sure to check your announcement page daily.
 6. Grades for homework as well as exams will be posted in WebAssign. Click on "Grades" at the top of the screen. Click "View All" to see all grades for the semester.
- III. **Course Information:** At this link, you will find seating assignments for exams, keys to the exams, lecture notes and other important information.
- IV. **Study Aids:** Extra resources for help with the topics of this course.
- V. **External Links:** Important links will be posted here, including old exams and keys (make sure to read information for password to old exams).

Contact the UK InfoTech Customer Service Center for help with these or other matters related to Blackboard.

Online Blackboard Support Center is available to you to answer all kinds of Bb-related questions, 24 hours a day and seven days a week. This extra source of help offers web pages, real-time text chat, and a toll-free phone number. Take a few minutes to explore the full array of helpful information pages on this site. Users can learn about Bb features old and new and get help with a wide range of Bb-related issues.

Before logging into Bb, go to the 24/7 Bb Support Center at

<http://supportcenteronline.com/ics/support/default.asp?deptID=1083> (or us this abbreviated address:

<http://tinyurl.com/9qw5t>).

After logging in, the quickest way to access this Support Center is to click the Help icon (question mark) at the top of every Bb page, next to the Logout button.

The UK InfoTech CSC, located in 111 McVey Hall (Computing Center) is open for visits 7 AM to 6 PM, Monday through Friday. During these hours, you can also phone in (859-257-1300) to speak with a consultant. Outside of these hours, you can leave a phone message. You can send an e-mail to helpdesk@uky.edu at any time. In your message, be sure to provide as many details as you can.

Any Bb user who has forgotten a password and needs it reset to the default should contact the CSC for assistance.

WebAssign Technical Support

Go to http://webassign.net/info/support/stu_support.html

CHE 103 – Chemistry for Health Professionals

17. MAJOR TEACHING OBJECTIVES

- To provide students with an explanation of the structure of various types of inorganic, organic and biochemical compounds.
- To provide students with an explanation of the fundamental chemistry concepts of atoms, molecules and reactions.
- To teach compound nomenclature, and common reactions of inorganic and organic compounds.
- To provide students with an explanation of the various functions of biochemical compounds as they relate to living systems.

LEARNING OUTCOMES

On completion of this course, the highly successful student should/will have learned and/or be able to do the following with a reasonable degree of facility:

- To categorize chemical substances by various schemes such as classification of matter, state of matter, ...
- To know the electron configuration of atoms and how this information determines the properties of the substance.
- To determine the Lewis structure of molecules and ions and derive information from the structure, such as geometry, polarity and solubility.
- To calculate mass relationships in chemical reactions.
- To understand the properties of solids, liquids and gases.
- To know the concepts of solution chemistry, including the types of reactions and quantitative calculations associated with the reactions.
- To understand the energy changes and rates of chemical reaction.
- To utilize equilibrium concepts in general and specifically as they relate to acid/base chemistry.
- To gain a general understanding of nuclear reactions.

- To accurately name organic compounds including the following:
 - Alkanes, alkenes, alkynes and cycloalkanes
 - Aromatic compounds
 - Alcohols, phenols, thiols, esters
 - Aldehydes and ketones
 - Carboxylic acids and their derivatives
 - Amines and amides

- To be able to identify the reactions which produce these classes of organic substances.

- To know the products of common reactions involving these classes.

- To recognize common roles of organic compounds in living systems.

- To identify common biochemical compounds including -
 - Carbohydrates
 - Lipids
 - Proteins
 - Enzymes

- To understand the structure and functions of the biochemical compounds.

- To understand how these biochemical molecules function in living systems – for example, in respiration and metabolism.