Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: HONS (CHEM)

2. Course Number and Title: 163 Honors Chemical Principles: Atoms to Molecules
   Number of Credits: 3  Total hrs/week: 3

   - Lecture: ☒  - Lab: ☐  - Recitation: ☐  - Seminar: ☐

For Independent study courses:
   - Research: ☐  - Field experience: ☐
   - Clinical Practice: ☐  - Internship: ☐
   - Practicum: ☐  - Independent Course Work: ☐

3. Semester and year when course will first be offered: Fall 2010

4. Catalog Description (please limit to 50 words):
   Introductory chemistry course presenting theoretical principles and fundamental facts for understanding chemical compounds starting with the atom, building to molecules. Math 111 is a pre-requisite. Hons 163L is a co-requisite.

5. Check if appropriate: Humanities: ☐ Social Science: ☐ (meets minimum degree requirements)

6. Check if appropriate: ☐
   This course will be cross listed with: ______
   Rationale for cross listing: ______
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.
   N/A

   b) Please explain overlap with any existing courses.
   Students who pass Hons 163 or Hons 163L with D+ or lower must take Chem. 112, then the Chem. 231/232 sequence, to earn credit equivalent to the Hons 163, Hons 164, Hons 263, Hons 264 sequence.

8. Prerequisites (or other restrictions):

This form was approved by FCC on 5/19/2009 and replaces all others.
Proposal for a New Course

This course is designed for Honors College students with a rigorous high school chemistry background and non-Honors College students (upon approval by the Honors College) with AP Chemistry placement scores of 3 or higher. Math 111 is a pre-requisite. Hons 163L is a co-requisite.

9. Rationale/justification for course (consider the following issues):

a) What are the goals and objectives of the course?
   This is the first part of a four course sequence designed to prepare students in all scientific disciplines to appreciate molecular processes that are central to all scientific disciplines. This course provides descriptive theoretical models for understanding chemical compounds starting with the atom, building to molecules.

b) How does the course support the mission statement of the department and the organizing principles of the major?
   The lecture courses will stress critical thinking skills development over rote memorization, although fundamental facts and theories will necessarily be presented. The lectures will be designed to challenge student understanding of fundamental concepts, then hold students accountable for knowing those concepts in development of new concepts. It is felt that the progression of this four course sequence will make the fundamentals of chemistry, as used in other science courses like physics, geology and biology, more comprehensible and of greater service to the students and their future learning.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
    One of two options that satisfies the first course required to major in Chemistry or Biochemistry

b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:
    This new sequence (Hons 163/Hons 164) is designed for science majors and is a more rigorous and more in depth coverage of the already approved Chem 101/Chem 102 sequence. Petitioning Gen Ed committee to allow the sequence 163/163L and 164/164L to satisfy science general education requirement.

11. Method of teaching:
    Traditional lecture style course.

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:
    A consequence of this new HONS course sequence will be that these
Proposal for a New Course

students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a prerequisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry/biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:

For HONS 163 the lead instructor in the lecture will be Dr. Overby, other faculty will sit in on some of the lectures to stay in touch with the course development and to become a familiar face for students who might take future chemistry courses, including HONS 164.

c) Frequency of offering:

   each fall: ☒       each spring: ☐
   every two years: ☐      every three years: ☐
   other ☐ (Explain): _____

13. Requirements for additional resources made necessary by this course:

   a) Staff:
      none

   b) Budget:
      none

   c) Library:
      none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

   a) ☐ yes ☒ no

   b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

       _____

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

   Honors 163: Honors Chemical Principles: Atoms to Molecules
   Fall 2010
Proposal for a New Course

Instructor: Dr. Jason Overby
Office: NSCB 318
Office Hours: MWF 10-11, M 1-2, W 1-2; others by arrangement
E-mail: overbyj@cofc.edu
Homepage: http://www.cofc.edu/~overbyj
Phone: 953-8098

Description of Course: This is an introductory course in chemistry emphasizing theoretical aspects and designed primarily for students who intend to take additional courses in chemistry. It is assumed that students in this course are prepared from the high school course work to solve problems in the lab based on stoichiometric calculations. This course, the associated 163L course, and the subsequent Hons 164/164L courses are designed to satisfy the College of Charleston general education requirement for science.

Co-requisites and prerequisites: Honors 163L is a corequisite, Math 111 is a prerequisite.

Text (required): Chemistry: Atoms First, 1st Edition, Burdge and Overby

Text Coverage:

Fundamentals (Brief presentation about what you are expected to know before taking this course)
Electronic Structure of Atoms
Periodic Trends of the Elements
Ionic and Covalent Compounds
Molecules
Lewis Structures, with emphasis on organic compounds
Molecular Geometry and Bonding Theories
Chemical Reactions
Chemical Reactions in Aqueous Solutions
Thermochemistry
Gases, Gas Laws, Reaction Kinetics
Intermolecular Forces and the Physical Properties of Condensed Phases

Online Homework: (http://www.aleks.com/) We will be using ALEKS as the source for all the graded homework and quizzes.

Supplemental materials: Please visit my homepage for up-to-date information concerning the course. Copies of the syllabus, exams and quizzes will be posted there as well as other important information related to the course.

Class policies: Attendance at all class meetings is recommended; however, attendance will not be recorded. You are expected to budget your time wisely.
Proposal for a New Course

and meet your obligations for this class. Experience has demonstrated that there is a strong correlation between your grade in the class and your attendance. You are responsible for learning the material when you miss class. My time in office hours is not for catching you up on material you missed. In the event you miss a lecture period, please check the course webpage for a synopsis of that day’s lecture. Please bring a calculator to all lectures and examinations as the course requires the use of a calculator. It is your responsibility to have one that can perform logarithmic and exponential functions. I cannot provide one if you forget yours during an examination or quiz. Homework problems will be given but not collected. These are for your benefit and are intended as guides for material that may appear on the examinations.

Grading Scheme: Examinations. 50%; ALEKS Homework, 25%; Final Exam, 25%
Grading Scale: A, 92-100; A–, 90-91; B+, 88-89; B, 82-87; B–, 80-81; C+, 78-79; C, 72-77; C–, 70-71; D+, 68-69; D, 62-67; D–, 60-61; F, below 60

Grading Policy: While no exam scores will be dropped, the lowest of your four exam scores will only count 5% instead of 15%. Thus, the three highest exam scores will comprise 45% of the 50% of your final grade and the remaining 5% will result from the lowest exam score. Unless you have a valid, verified reason for missing an exam, a score of zero will be awarded for a missed exam. If you know you will be missing an exam, appropriate accommodations can be made in most cases. The two lowest chapter ARIS scores will be dropped. These are intended as gauges of your comprehension and application of recently covered material as well as to encourage you to keep up with the readings and homework.

Honor Code: The Honor system is in effect in all your efforts for this course. Cheating will not be tolerated. If you are caught cheating, a grade of “F” will automatically be given and you will be brought before the Honor Board. Please refer to the Department’s policy on Scientific Integrity for more information. By enrolling in this course, you are agreeing to abide by the Departmental policy on Scientific Integrity. You are not competing against everybody else in the class nor are there a set number of grades that will be given. It should be your objective to do the best you can on all the work. I firmly believe that teachers do not give grades, students earn them. Students in this course are also expected to be aware of and to conform to the departmental Policy on Scientific Integrity.

Examination Schedule (subject to change): Test 1, September x; Test 2, October x; Test 3, November x; Test 4, December x; Final Exam, December x

Final Examination Information: The final examination is a standardized examination containing 70 multiple choice questions and was prepared by the American Chemical Society. This is a timed exam (110 minutes).
Proposal for a New Course

14. Signature of Department Chair or Program Director:

______________________________________________________________

Date: ________________________

15. Signature of Dean of School:

______________________________________________________________

Date: ________________________

16. Signature of Provost:

______________________________________________________________

Date: ________________________

17. Signature of Business Affairs Official

______________________________________________________________

Date: ________________________

18. Signature of Curriculum Committee Chair

______________________________________________________________

Date: ________________________

19. Signature of Faculty Senate Secretary:

______________________________________________________________

Date Approved by Senate: ________________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: HONS (CHEM)

2. Course Number and Title: 163L Honors Chemical Principles Laboratory: Investigations of Atomic and Molecular Theory
   Number of Credits: 1  Total hrs/week: 3
   Lecture:  Lab:  Recitation:  Seminar:

For Independent study courses:
   Research:  Field experience:  Clinical Practice:  Internship:  Practicum:  Independent Course Work:  

3. Semester and year when course will first be offered: Fall 2010

4. Catalog Description (please limit to 50 words):
   Introductory chemistry laboratory course presenting practical applications related to concepts from lecture. This course stresses student development of proper technique, application of scientific method, data analysis, and reporting of scientific data. Formal 1-2 page reports required for experiments.

5. Check if appropriate: Humanities:  Social Science: (meets minimum degree requirements)

6. Check if appropriate:  
   This course will be cross listed with: ______
   Rationale for cross listing: ______
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal. N/A

b) Please explain overlap with any existing courses.
   Students who pass Hons 163 or 163L with D+ or lower must take Chem. 112, then the Chem. 231/232 sequence, to earn credit equivalent to the Hons 163, Hons 164, Hons 263, Hons 264 sequence.
Proposal for a New Course

8. Prerequisites (or other restrictions):
   This course is designed for Honors College students with a rigorous high school chemistry background and non-Honors College students (upon approval by the Honors College) with AP Chemistry placement scores of 3 or higher. Math 111 is a pre-requisite. Hons 163 is a co-requisite.

9. Rationale/justification for course (consider the following issues):
   a) What are the goals and objectives of the course?
      This is the first part of a four course sequence designed to prepare students in all scientific disciplines to appreciate molecular processes that are central to all scientific disciplines. This course provides hands on testing of models for understanding chemical compounds starting with the atom, building to molecules.
   b) How does the course support the mission statement of the department and the organizing principles of the major?
      The laboratory courses will stress critical thinking and experimentation to support the co-requisite lecture (Hons 163). The laboratories will be designed to engage the student in scientific testing of hypothesis. The course will also offer instruction on how to perform simple laboratory tasks.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
    One of two options that satisfies the first course required of major in Chemistry or Biochemistry

    b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:
    Petitioning Gen Ed committee to allow the sequence 163/163L and 164/164L to satisfy science general education requirement.

11. Method of teaching:
    Traditional laboratory style course with brief pre-lab discussions with students followed by student experimentation, data analysis, and reporting results.

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:
    A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry /
Proposal for a New Course

biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:
For HONS 163L the lead instructor will be Dr. Kinard. Other faculty will sit in on some of the laboratories to stay in touch with the course development and to become a familiar face for students taking the subsequent course, HONS 164L.

c) Frequency of offering:
- each fall: ☒
- each spring: ☐
- every two years: ☐
- every three years: ☐
- other ☐ (Explain): 

13. Requirements for additional resources made necessary by this course:

a) Staff:
none

b) Budget:
none

c) Library:
none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

a) ☐ yes ☒ no

b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

Honors 163L: Honors Chemical Principles: Atoms to Molecules
Fall 2010

Instructor: Dr. Frank Kinard
Office: NSCB 318
Office Hours: MWF 10-11, M 1-2, W 1-2; others by arrangement
Proposal for a New Course

E-mail: kinardf@cofc.edu
Homepage: http://kinardf.people.cofc.edu/kinard.html
Phone: 953-5587

Description of Course: This is an introductory laboratory course in chemistry emphasizing theoretical aspects and designed primarily for students who intend to take additional courses in chemistry. This course, the associated 163 course, and the subsequent Hons 164/164L courses are designed to satisfy the College of Charleston general education requirement for science.

Co-requisites and prerequisites: Honors 163 is a corequisite. Math 111 is a prerequisite for this course.

ATTENDANCE AND GRADING POLICY: This course is conducted under the Honor Code of the College of Charleston, the departmental policy on Scientific Integrity, and the department policy on laboratory safety. Students will sometimes work with lab partners and all data belongs to the group. Lab partners may interpret data and discuss results among the members of their group but all lab reports, examinations, and graded homework must represent an individual effort. When in doubt about any assignment, see the instructor for help. Class attendance is the responsibility of each student. No make-up laboratories will be offered except in the instance of excuses certified by the Undergraduate Dean or prior permission from the Instructor. All laboratories must be done in order to receive credit for the course. Any laboratory missed without a certified excuse will result in the grade of 0. The grade of "WA" will be used for any student with three or more unexcused absences.

Grading Scale: 100-98, A+; 97-93, A; 92-90, A-; 89-88, B+; 87-83, B; 82-80, B-; 79-78, C+; 77-73, C; 72-70, C-; 69-68, D+; 67-65, D; 64-00, F

Grade Determination: The overall course grade will be calculated as follows: 10% Conduct, 15% quizzes, 30% reports, 10% notebook, 35% exam.

Last day to withdraw with the grade of "W": x, xx, 2010

Text (required): prepared by Dr. W.F. Kinard.

Laboratory Experiments

Introduction to Honors Chemistry Laboratory - Computer Exercises
Introduction to Laboratory Measurements
Characterization of the Physical Properties of Compounds
Stoichiometry
Introduction to Atomic and Molecular Spectroscopy
Periodic Properties of Elements and their Compounds
Proposal for a New Course

Introduction to Mass Spectroscopy - Investigation of Isotopes
Introduction to Molecular Modeling
Molar Mass of a Volatile Liquid
Introduction to IR - Investigation of Bonding
Synthesis of Alum from Aluminum Scrap
Separation of Plant Pigments by Thin Layer Chromatography
Iodometric Titration of Household Chlorine Bleach
Laboratory Final Examination
Proposal for a New Course

14. Signature of Department Chair or Program Director:
   ________________________________________________________________
   Date: ________________________

15. Signature of Dean of School:
   ________________________________________________________________
   Date: ________________________

16. Signature of Provost:
   ________________________________________________________________
   Date: ________________________

17. Signature of Business Affairs Official
   ________________________________________________________________
   Date: ________________________

18. Signature of Curriculum Committee Chair
   ________________________________________________________________
   Date: ________________________

19. Signature of Faculty Senate Secretary:
   ________________________________________________________________
   Date Approved by Senate: ________________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: HONS (CHEM)

2. Course Number and Title: **HONS 164: Honors Organic Chemistry: Applications of Molecular Structure and Properties**
   Number of Credits: 3  Total hrs/week: 3
   Lecture: ☐  Lab: ☐  Recitation: ☐  Seminar: ☐

   For Independent study courses:
   Research:☐  Field experience: ☐
   Clinical Practice: ☐  Internship: ☐
   Practicum: ☐  Independent Course Work: ☐

3. Semester and year when course will first be offered: **Spring 2011**

4. Catalog Description (please limit to 50 words):
   An introductory course utilizing theoretical principles and fundamental facts to form an understanding of the structure, characterization, properties and reactivities of organic compounds. Functional groups, fundamentals of reaction mechanisms, and spectroscopy are included.

5. Check if appropriate: Humanities:☐  Social Science: ☐ (meets minimum degree requirements)

6. Check if appropriate: ☐
   This course will be cross listed with: ______
   Rationale for cross listing: ______
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.
   N/A

   b) Please explain overlap with any existing courses.
   **Students who earn a D+ or less in Hons 164 or Hons 164L with D+ or lower must take Chem. 232/232L, then the Chem. 112/112L sequence, to earn credit equivalent to the Hons 163, Hons 164, Hons 263, Hons 264 sequence.**

This form was approved by FCC on 5/19/2009 and replaces all others.
Proposal for a New Course

8. Prerequisites (or other restrictions):

Hons 163 and Hons 163L with a grade of D+ or higher. Hons 164L is a co-
requisite. Math 120 is recommended as a pre- or co-requisite.

9. Rationale/justification for course (consider the following issues):

a) What are the goals and objectives of the course?
This is the second part of a four course sequence designed to prepare
students in all scientific disciplines to appreciate molecular processes that
are central to all scientific disciplines. This course provides descriptive
theoretical models for understanding chemistry and structure of organic
molecules. The course also develops student critical thinking and problem
solving skills common to science within the language of organic chemistry.

b) How does the course support the mission statement of the department and the
organizing principles of the major?
The lecture courses will stress critical thinking skills development over rote
memorization, although fundamental facts and theories will necessarily be
presented. The lectures will be designed to challenge student
understanding of fundamental concepts, then hold students accountable
for knowing those concepts in development of new concepts. It is felt that
the progression of this four course sequence will make the fundamentals of
chemistry, as used in other science courses like physics, geology and
biology, more comprehensible and of greater service to the students and
their future learning.

10. a) For courses in the major, how does the course enhance the beginning, middle, or
end of the major?
One of two options that satisfies the first course required of major in
Chemistry or Biochemistry

b) For courses used by non-majors, how does the course support the liberal arts
tradition including linkages with other disciplines:
Petitioning Gen Ed committee to allow the sequence 163/163L and 164/164L
to satisfy science general education requirement. This sequence will
hopefully make fundamental chemistry more relevant to biology majors by
bringing more biological applications of chemistry and by bringing
organic/biorganic sooner.

11. Method of teaching:
Traditional lecture style course.

12. a) Address potential enrollment pattern shifts in the department or college-wide
Proposal for a New Course

related to the offering of this course:

A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry / biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:

For HONS 164 the lead instructor in the lecture will be Dr. Wyatt. Other Chemistry faculty will sit in on some of the lectures to stay in touch with the course development and to become a familiar face for students taking this or subsequent courses.

c) Frequency of offering:

- each fall: ☐
- each spring: ☒
- every two years: ☐
- every three years: ☐
- other ☐ (Explain): ___

13. Requirements for additional resources made necessary by this course:

a) Staff:
   none

b) Budget:
   none

c) Library:
   none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

a) ☐ yes ☒ no

b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).
Proposal for a New Course

Honors 164: Spring 2011

Instructor: Dr. Justin Wyatt
Office: NSCB 310; Office Hours: to be announced
E-mail: wyattj@cofc.edu
Phone: 953-6587

This course, the associated 164L course, and the previous Hons 163/163L courses are designed to satisfy the College of Charleston general education requirement for science.

Honor Code Policy: Student conduct in this course is expected to conform to the standards of the College of Charleston Student Honor Code Policy. In addition, students in this course are also expected to be aware of and to conform to the standards of the Department of Chemistry & Biochemistry Policy on Scientific Integrity.

Co-Requisite & Drop Policy: HONS 164L is a corequisite. If you drop the lecture, you must drop the lab. If you drop the lab, you must drop the lecture. The main point for spectroscopic analysis instruction will be in the laboratory, but your abilities in spectroscopic analysis will be examined on tests, quizzes and the final examination in the lecture. If you do not feel comfortable with spectroscopic analysis as presented in your lab section, please feel free to stop by my office for clarification of how spectroscopic analysis relates to the lecture course. The last day to withdraw from a course with a grade of "W" will be XXXX, 2011.

Grade Scale: 100-93 (A); 92-90 (A-); 89-87 (B+); 86-83 (B); 82-80 (B-); 79-77 (C+); 76-73 (C); 72-70 (C-); 69-67 (D+); 66-63 (D); 62-60 (D-); 59-0 (F)

Grade Policy: There will be four tests, daily quizzes, and a final examination. The quiz score average will count as a test grade. The overall course grade will be calculated as follows: Method I: (.75 x test average) + (.25 x final exam) OR Method II: (.60 x best 4 test average) + (.40 x final exam). Your final grade will be determined by whichever of the two methods gives you the higher grade.

Attendance Policy: Attendance to class is required. The grade of "WA" will not be used in this course. Missed tests and quizzes will be given a grade of "0". The grade of "X" will be used for any student who misses the final exam. You are responsible for learning the required material, some of which may only be presented in the text, some of which might only be covered in the lecture, but most of which will be covered in both the text and the lecture. If you miss a class, please do not ask me to tell you what we covered in that class. However, if
Proposal for a New Course

you have a planned absence (due to your official representation of the College off campus or for another reasonable cause) please let me know well in advance and I will try to make an accommodation for your scheduled conflict.

Electronic Device Policy: Cell phones must be turned to vibrate (no audible alarms) during the class period. Students using cell phones, web-browsing or texting during class will be asked to leave the classroom. Calculators will not be allowed during tests and quizzes. If you are a little rusty with simple operations of addition, subtraction, multiplication, and division, you should practice before the tests and quizzes. It is recommended that you work problems, when studying, the way you will have to work them during quizzes or on tests.

Student Objective: Your objective is to learn the fundamental facts and concepts of introductory organic chemistry as described in Chapter 1-12 of your text and in the lectures. This requires more than memorization, although there will be quite a lot that you must memorize. The primary method for study in this course is working problems, as many as you can. Working problems does not mean looking up answers, it means taking the time necessary to figure out how to solve the problem and then solving enough problems of the same type so that you will not struggle to answer similar or related problems on tests or quizzes. The final examination used will be an objective, multiple choice style examination administered by the department.

Co-requisites and prerequisites: Honors 164L is a corequisite. Honors 163 and 163L with grades of D+ or higher are prerequisites. Math 120 is recommended as a co- or prerequisite.

Text (required): Organic Chemistry, A Biological Approach, McMurray

Topical Outline of Coverage:

Structure and Bonding: Constitutional Isomers and Resonance
Polar Covalent Bonds: Acids and Bases
Alkanes and Their Conformations
Cycloalkanes and Their Conformations
Configurational Isomers
Overview of Organic Reactions and Curved Arrow Mechanisms
Alkenes and Alkynes and Their Preparations
Reactions of Alkenes and Alkynes
Aromatic Compounds
Proposal for a New Course

14. Signature of Department Chair or Program Director:
________________________________________________________________________

Date: ______________________

15. Signature of Dean of School:
________________________________________________________________________

Date: ______________________

16. Signature of Provost:
________________________________________________________________________

Date: ______________________

17. Signature of Business Affairs Official
________________________________________________________________________

Date: ______________________

18. Signature of Curriculum Committee Chair
________________________________________________________________________

Date: ______________________

19. Signature of Faculty Senate Secretary:
________________________________________________________________________

Date Approved by Senate: ______________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: HONS (CHEM)

2. Course Number and Title: HONS 164L: Honors Organic Chemistry Laboratory: Purification, Separation and Characterization of Organic Compounds
   Number of Credits: 1   Total hrs/week: 3
   Lecture: Lab: Recitation: Seminar:

For Independent study courses:
   Research: Field experience: Clinical Practice: Internship: Practicum: Independent Course Work:

3. Semester and year when course will first be offered: Spring 2011

4. Catalog Description (please limit to 50 words):
   An introductory laboratory course presenting practical applications related to concepts from lecture. This course stresses the student development of proper technique, application of scientific method, data analysis, and reporting of scientific data. The formal reports for each experiment will be one-two pages each.

5. Check if appropriate: Humanities: Social Science: (meets minimum degree requirements)

6. Check if appropriate:
   This course will be cross listed with: ______
   Rationale for cross listing: ______
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.
   N/A

   b) Please explain overlap with any existing courses.
   Students who earn a D+ or less in Hons 164 or Hons 164L must take Chem. 112/112L, and then take Chem. 232/232L to earn credit equivalent to the
Proposal for a New Course  
Hons 163, Hons 164, Hons 263, Hons 264 sequence.

8. Prerequisites (or other restrictions):
   Hons 163 and Hons 163L with a grade of D+ or higher. Hons 164 is a co-
   requisite. Math 120 is recommended as a pre- or co-requisite.

9. Rationale/justification for course (consider the following issues):

   a) What are the goals and objectives of the course?
      This is the second part of a four course sequence designed to prepare
      students in all scientific disciplines to appreciate molecular processes that
      are central to all scientific disciplines. This course provides hands on
      testing for models of understanding chemistry and structure of organic
      molecules. The course also develops student critical thinking and problem
      solving skills common to science within the language of organic chemistry.

   b) How does the course support the mission statement of the department and the
      organizing principles of the major?
      The laboratory courses will stress analytical thinking and skills
      development to support the co-requisite lecture (Hons 164). The labs
      provide instruction and hands on experience with the purification,
      separation and characterization of organic compounds. This course is the
      primary venue for instruction of spectroscopic analysis or organic
      compounds. It is felt that the progression of this four course sequence will
      make the fundamentals of chemistry, as used in other science courses like
      physics, geology and biology, more comprehensible and of greater service
      to the students and their future learning.

10. a) For courses in the major, how does the course enhance the beginning, middle, or
     end of the major?
     One of two options that satisfies the first two year course sequence
     required to major in Chemistry or Biochemistry

     b) For courses used by non-majors, how does the course support the liberal arts
     tradition including linkages with other disciplines:
     Petitioning Gen Ed committee to allow the sequence 163/163L and 164/164L
     to satisfy science general education requirement. This new sequence is
     designed for science majors and is a more rigorous and more in depth
     coverage of the already approved Chem 101/Chem 102 sequence.

11. Method of teaching:
    Traditional laboratory style course with brief pre-lab discussions with students
    followed by student experimentation, data analysis, and reporting results.
Proposal for a New Course

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:

A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry / biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:

For HONS 164L the lead instructor will be Dr. Heldrich. He will teach this a part of his normal load.

c) Frequency of offering:
   each fall: □  each spring: ☒
   every two years: □  every three years: □
   other □ (Explain): ______

13. Requirements for additional resources made necessary by this course:

   a) Staff:
      none

   b) Budget:
      none

   c) Library:
      none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

   a) □ yes  ☒ no

   b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

Honors 164L: Spring 2011
Proposal for a New Course

Instructor: Dr. Rick Heldrich
Office: NSCB 124; Office Hours: to be announced
E-mail: heldrichr@cofc.edu; Phone: 953-5515

This course, the associated 164 course, and the previous Hons 163/163L courses are designed to satisfy the College of Charleston general education requirement for science.

Student Conduct Policy: Student conduct in this course is expected to conform to the standards of the College of Charleston Student Honor Code Policy. In addition, students in this course are also expected to be aware of and to conform to the standards of the Department of Chemistry & Biochemistry Policy on Scientific Integrity and the department policy on Safety.

Co-Requisite & Drop Policy: HONS 164 is a co-requisite of this course. If you drop the lecture, you must drop the lab. If you drop the lab, you must drop the lecture. The main point for spectroscopic analysis instruction will be in the laboratory, but your abilities in spectroscopic analysis will be examined on tests, quizzes and the final examination in the lecture. The last day to withdraw from a course with a grade of “W” will be XXXX, 2011.

Grade Scale: 100-93 (A); 92-90 (A-); 89-87 (B+); 86-83 (B); 82-80 (B-); 79-77 (C+); 76-73 (C); 72-70 (C-); 69-67 (D+); 66-63 (D); 62-60 (D-); 59-0 (F)

Grade Policy: It is possible for every student in this course to earn a grade of A. Your course grade is not curved or adjusted to the performance of other students in the course. There will be grades for your conduct (including attendance, cleaning the lab, being prepared for the lab, etc.), quizzes, lab notebook, lab reports, and a final exam. The overall course grade will be calculated as follows: 10% Conduct, 15% quiz average, 35% reports, 10% notebook, 30% exam.

Attendance Policy: Attendance is required. The grade of "WA" will be used for any student with three or more unexcused absences. All work associated with missed labs will be given a grade of "0". The grade of "X" will be used for any student who misses the final exam. Each student is allowed one excused absence for justified cause during the semester. The excuse must be approved in advance by the instructor.

Electronic Device Policy: You may use electronic devices during labs, but not during quizzes or exams. Cell phones must be turned off (no audible alarms) during the pre-lab lectures. Calculators will not be allowed during tests and quizzes. If you are a little rusty with simple operations of addition, subtraction, multiplication, and division, you should practice before the tests and quizzes. It

This form was approved by FCC on 5/19/2009 and replaces all others.  

p. 4
Proposal for a New Course

is recommended that you work problems, when studying, the way you will have to work them during quizzes or on tests.

Student Objective: To learn simple, common techniques used to purify, separate and characterize organic compounds. To apply those techniques and skills in an effort to test understanding of the structure of organic molecules.

Text (required): prepared by instructor

List of Experiments

- Purification of Solids by Recrystalization, Characterization by MP
- Purification of Liquids by Simple Distillation, Characterization by BP
- Use of TLC and GC to Identify Components in a Mixture
- Use of Chromatography to Separate Components in a Mixture
- Use of Acid-Base Extraction to Separate Organic Compounds
- Use of Extraction to Isolate Caffiene from Tea
- Spectroscopic Analysis (IR, MS)
- Spectroscopic Analysis (CMR)
- Electrophilic Aromatic Substitution, Analysis of a Chemical Reaction Mixture
- Electrophilic Aromatic Subsitition, Preparation, Isolation and Characterization of the Product of a Chemical Reaction
Proposal for a New Course

14. Signature of Department Chair or Program Director:
______________________________________________________________
Date: ________________________

15. Signature of Dean of School:
______________________________________________________________
Date: ________________________

16. Signature of Provost:
______________________________________________________________
Date: ________________________

17. Signature of Business Affairs Official
______________________________________________________________
Date: ________________________

18. Signature of Curriculum Committee Chair
______________________________________________________________
Date: ________________________

19. Signature of Faculty Senate Secretary:
______________________________________________________________
Date Approved by Senate: ________________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: **HONS**

2. Course Number and Title: **263 Honors Organic Chemistry: Reactions and Applications of Organic Compounds in Materials Science and Biology**
   
   Number of Credits: **3**  
   Total hrs/week: **3**

   Lecture: ☑  Lab: ☐  Recitation: ☐  Seminar: ☐

   For Independent study courses:
   
   Research:☐  Field experience: ☐
   Clinical Practice: ☐  Internship: ☐
   Practicum: ☐  Independent Course Work: ☐

3. Semester and year when course will first be offered: **Fall 2011**

4. Catalog Description (please limit to 50 words):

   This course provides qualitative introduction to concepts of kinetic and thermodynamic control of the reactions of organic compounds. Math 120 is a prerequisite. Math 220 is recommended as a corequisite. Hons 263L is a corequisite. Grades of D+ or higher in Hons 164 and Hons 164L required.

5. Check if appropriate: Humanities:☐  Social Science: ☐  (meets minimum degree requirements)

6. Check if appropriate: ☐

   This course will be cross listed with: ______

   Rationale for cross listing: ______

   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.

   **N/A**

   b) Please explain overlap with any existing courses.

8. Prerequisites (or other restrictions):

This form was approved by FCC on 5/19/2009 and replaces all others.
Proposal for a New Course

Math 120 is a prerequisite. Math 220 is recommended as a corequisite. Hons 263L is a co-requisite. Grades of D+ or higher in Hons 164 and Hons 164L required. Students who fail HONS 164 or 164L should take CHEM 112/112L as needed and then take the Chem 231/232 sequence.

9. Rationale/justification for course (consider the following issues):

a) What are the goals and objectives of the course?
This is the third part of a four course sequence designed to prepare students in all scientific disciplines to appreciate molecular processes that are central to all scientific disciplines. This course provides descriptive theoretical models for understanding chemical reactions and factors that control the outcomes of chemical reactions based on understanding built on knowledge about the structures of the reacting molecules.

b) How does the course support the mission statement of the department and the organizing principles of the major?
The lecture courses will stress critical thinking skills development over rote memorization, although fundamental facts and theories will necessarily be presented. The lectures will be designed to challenge student understanding of fundamental concepts, then hold students accountable for knowing those concepts in development of new concepts. It is felt that the progression of this four course sequence will make the fundamentals of chemistry, as used in other science courses like physics, geology and biology, more comprehensible and of greater service to the students and their future learning.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
One of two options that satisfies the first two year sequence of courses required of majors in Chemistry or Biochemistry

b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:
This sequence will hopefully make fundamental chemistry more relevant to biology majors by bringing more biological applications of chemistry and by bringing organic/biorganic sooner.

11. Method of teaching:
Traditional lecture style course.

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:
A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative
Proposal for a New Course

Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry / biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:
For HONS 263 the lead instructor in the lecture will be Dr. Doig. Dr. Donato will sit in on some lectures to stay in touch with the course development and to become a familiar face for students taking the subsequent course, HONS 264. Other faculty in the department will also sit in on the course to stay in touch with curricular development.

c) Frequency of offering:
   each fall: ☒  each spring: ☐
   every two years: ☐  every three years: ☐
   other ☐ (Explain): ______

13. Requirements for additional resources made necessary by this course:

   a) Staff:
      none

   b) Budget:
      none

   c) Library:
      none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?
a) ☐ yes  ☒ no

   b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:
      ______

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

Honors 263: Honors Organic Chemistry: Reactions and Applications of Organic Compounds in Materials Science and Biology; Fall 2011

This form was approved by FCC on 5/19/2009 and replaces all others.
Proposal for a New Course

Instructor: Dr. Marion Doig
Office: NSCB 306; Office Hours: to be announced
E-mail: doigm@cofc.edu
Phone: 953-8093

Description of Course: This is an introductory course in chemistry emphasizing theoretical qualitative application of kinetic and thermodynamic theories that control the outcomes of chemical reactions. The molecules studied in this course will be organic compounds, with an emphasis on compounds and reactions common to biological systems. Rigorous mathematical treatment of the theories will be treated in Hons 264, but an underlying appreciation of mathematical methods is expected.

Co-requisites and prerequisites: Honors 263L is a corequisite. Math 120 is a prerequisite, Math 220 is recommended as a corequisite.

Honor Code Policy: Student conduct in this course is expected to conform to the standards of the College of Charleston Student Honor Code Policy. In addition, students in this course are also expected to be aware of and to conform to the standards of the Department of Chemistry & Biochemistry Policy on Scientific Integrity.

Co-Requisite & Drop Policy: HONS 263L is a pre- or corequisite of this course. If you drop the lecture, you must drop the lab. If you drop the lab, you must drop the lecture. The last day to withdraw from a course with a grade of “W” will be XXXX, 2011.

Grade Scale: 100-93 (A); 92-90 (A-); 89-87 (B+); 86-83 (B); 82-80 (B-); 79-77 (C+); 76-73 (C); 72-70 (C-); 69-67 (D+); 66-63 (D); 62-60 (D-); 59-0 (F)

Grade Policy: There will be four tests, and a final examination. The overall course grade will be calculated as follows: Method I: (.75 x test average) + (.25 x final exam) OR Method II: (.60 x best 3 test average) + (.40 x final exam). Your final grade will be determined by whichever gives you the higher grade.

Attendance Policy: Attendance to class is required. Missed tests and quizzes will be given a grade of “0”. The grade of “X” will be used for any student who misses the final exam. You are responsible for learning the required material, some of which may only be presented in the text, some of which might only be covered in the lecture, but most of which will be covered in both the text and the lecture. If you have a planned absence (due to your official representation of the College off campus or for another reasonable cause) please let me know well in advance and I will try to make an accommodation for your scheduled conflict.

This form was approved by FCC on 5/19/2009 and replaces all others.
Proposal for a New Course

Electronic Device Policy: Cell phones must be turned to vibrate (no audible alarms) during the class period. Students using cell phones, web-browsing or texting during class will be asked to leave the classroom. Calculators will not be allowed during tests and quizzes. If you are a little rusty with simple operations of addition, subtraction, multiplication, and division, you should practice before the tests and quizzes. It is recommended that you work problems, when studying, the way you will have to work them during quizzes or on tests.

Student Objective: Your objective is to learn the fundamental facts and concepts of introductory organic chemistry as described in Chapter 13-25 of your text and on the lecture syllabus within this course site. This requires more than memorization, although there will be quite a lot that you must memorize. The primary method for study in this course is working problems, as many as you can. The final examination used will be the nationally standardized examination constructed by the American Chemical Society for the two semester introductory organic sequence. A study guide for the final is available in reserved reading in the library, or may be purchased.

Text (required): Organic Chemistry, A Biological Approach, McMurray

Outline of Coverage

- Organohalides: Nucleophilic Substitutions and Eliminations
- Alcohols, Phenols, and Thiols; Ethers and Sulfides
- Preview of Carbonyl Chemistry
- Aldehydes and Ketones: Nucleophilic Addition Reactions
- Carboxylic Acids and Nitriles
- Carboxylic Acid Derivatives: Nucleophilic Acyl Substitution Reactions
- Carbonyl Alpha-Substitution and Condensation Reactions
- Amines and Heterocycles
- Biomolecules: Amino Acids, Peptides, and Proteins
- An Overview of Metabolism and Biochemical Energy
- Biomolecules: Carbohydrates
- An Overview of Carbohydrate Metabolism
- Biomolecules: Lipids and Their Metabolism
- An Overview of Nucleic Acids and Their Metabolism
Proposal for a New Course

14. Signature of Department Chair or Program Director:

______________________________________________________________

Date: ________________________

15. Signature of Dean of School:

______________________________________________________________

Date: ________________________

16. Signature of Provost:

______________________________________________________________

Date: ________________________

17. Signature of Business Affairs Official

______________________________________________________________

Date: ________________________

18. Signature of Curriculum Committee Chair

______________________________________________________________

Date: ________________________

19. Signature of Faculty Senate Secretary:

______________________________________________________________

Date Approved by Senate: ________________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

**NOTE:** All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: **HONS (CHEM)**

2. Course Number and Title: **HONS 263L: Honors Organic Chemistry Laboratory:**
   **Reactions and Applications of Organic Compounds in Materials Science and Biology**
   Number of Credits: 1  Total hrs/week: 3

   Lecture: □  Lab: ☒  Recitation: □  Seminar: □

   For Independent study courses:
   Research:□  Field experience: □
   Clinical Practice: □  Internship: □
   Practicum: □  Independent Course Work: □

3. Semester and year when course will first be offered:
   **Fall 2011**

4. Catalog Description (please limit to 50 words):
   An introductory laboratory course presenting practical applications related to concepts from lecture. This course stresses the student use of proper technique, application of scientific method, data analysis, and reporting of scientific data. The formal reports for each experiment will be one-two pages each.

5. Check if appropriate: Humanities:□ Social Science: □ (meets minimum degree requirements)

6. Check if appropriate: □
   This course will be cross listed with: ______
   Rationale for cross listing: ______
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.
   **N/A**

   b) Please explain overlap with any existing courses.
   Students who pass Hons 164 or Hons 164L with D+ or lower must take
Proposal for a New Course
Chem 112/112L then the Chem. 231/232 sequence, to earn credit equivalent to the Hons 163, Hons 164, Hons 263, Hons 264 sequence.

8. Prerequisites (or other restrictions):
Hons 164 and Hons 164L with a grade of D+ or higher. Hons 263 is a corequisite. Math 120 is a prerequisite. Math 220 is recommended as a corequisite. Grades of D+ or higher in Hons 164 and Hons 164L required. Students who fail HONS 164 or 164L should take CHEM 112/112L as needed and then take the Chem 231/232 sequence.

9. Rationale/justification for course (consider the following issues):

a) What are the goals and objectives of the course?
This is the third part of a four course sequence designed to prepare students in all scientific disciplines to appreciate molecular processes that are central to all scientific disciplines. This course provides hands on testing for models of understanding chemistry and structure of organic molecules. The course also develops student critical thinking and problem solving skills common to science within the language of organic chemistry.

b) How does the course support the mission statement of the department and the organizing principles of the major?
The laboratory courses will stress critical thinking and experimentation to support the co-requisite lecture (Hons 263). The labs will be changed each semester and will be designed to engage the student in scientific testing of hypothesis. The course will also offer instruction on how to perform simple laboratory tasks. It is felt that the progression of this four course sequence will make the fundamentals of chemistry, as used in other science courses like physics, geology and biology, more comprehensible and of greater service to the students and their future learning.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
One of two options that satisfies the first course required of major in Chemistry or Biochemistry

b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:
n/a

11. Method of teaching:
Traditional laboratory style course with brief pre-lab discussions with students followed by student experimentation, data analysis, and reporting results.
Proposal for a New Course

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:

A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry / biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:

For HONS 263L the lead instructor will be Dr. Beam. He will teach this a part of his normal load.

c) Frequency of offering:
   
each fall: ☒
each spring: ☒
every two years: ☐
every three years: ☐
other ☐ (Explain): ☐

13. Requirements for additional resources made necessary by this course:

a) Staff: none
b) Budget: none
c) Library: none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

a) ☐ yes ☒ no

b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

Honors 263L: Fall 2011
Proposal for a New Course

Instructor: Dr. Charles F. Beam
Office: NSCB 312; Office Hours: to be announced
E-mail: beamc@cofc.edu
Phone: 953-8099

Honor Code Policy: Student conduct in this course is expected to conform to the standards of the College of Charleston Student Honor Code Policy. In addition, students in this course are also expected to be aware of and to conform to the standards of the Department of Chemistry & Biochemistry Policy on Scientific Integrity and the departmental policy on laboratory safety.

Co-Requisite & Drop Policy: HONS 263 is a pre- or corequisite of this course. If you drop the lecture, you must drop the lab. If you drop the lab, you must drop the lecture. The last day to withdraw from a course with a grade of “W” will be XXXX, 2011.

Grade Scale: 100-93 (A); 92-90 (A-); 89-87 (B+); 86-83 (B); 82-80 (B-); 79-77 (C+); 76-73 (C); 72-70 (C-); 69-67 (D+); 66-63 (D); 62-60 (D-); 59-0 (F)

Grade Policy: There will be grades for your conduct (including attendance, cleaning the lab, being prepared for the lab, etc.), quizzes, lab notebook, lab reports, and a final exam. The overall course grade will be calculated as follows: 10% Conduct, 15% quiz average, 45% reports, 10% notebook, 20% exam.

Attendance Policy: Attendance is required. The grade of "WA" will be used for any student with three or more unexcused absences. All work associated with missed labs will be given a grade of "0". The grade of "X" will be used for any student who misses the final exam. Each student is allowed one excused absence for justified cause during the semester. The excuse must be approved in advance by the instructor.

Electronic Device Policy: You may use electronic devices during labs, but not during quizzes or exams. Cell phones must be turned off (no audible alarms) during the pre-lab lectures. Calculators will not be allowed during tests and quizzes. If you are a little rusty with simple operations of addition, subtraction, multiplication, and division, you should practice before the tests and quizzes. It is recommended that you work problems, when studying, the way you will have to work them during quizzes or on tests.

Student Objective: To test understanding of the structure and chemistry of organic molecules.

Text (required): prepared by the instructor
Proposal for a New Course

Experiments

Identification of an Unknown by Wet Chemical Tests and Spectroscopic Analysis.
The Diels-Alder Reaction
Use of 2D-NMR to Characterize Organic Compounds
Synthetic Sequence, Step I: Ferrocene
Synthetic Sequence, Step II: Acetyl Ferrocene
Column Chromatography: Separation of Ferrocene from Acetyl Ferrocene
Synthetic Sequence, Step III: Derivatization of Acetyl Ferrocene, Isolation and Characterization of the Major Product
Synthetic Sequence, Step IV: Condensation Reaction of Acetyl Ferrocene Derivative, Isolation and Characterization of the Major Product
Preparation of a Draft Manuscript, Poster Presentation, or Oral Presentation Based on Results of the Synthetic Sequence
Proposal for a New Course

14. Signature of Department Chair or Program Director:
______________________________

Date: ______________________

15. Signature of Dean of School:
______________________________

Date: ______________________

16. Signature of Provost:
______________________________

Date: ______________________

17. Signature of Business Affairs Official
______________________________

Date: ______________________

18. Signature of Curriculum Committee Chair
______________________________

Date: ______________________

19. Signature of Faculty Senate Secretary:
______________________________

Date Approved by Senate: ______________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: **HONS**

2. Course Number and Title: **264 Honors Chemical Principles: Mathematical Treatment of Equilibrium and Kinetics, Introduction to Nuclear Chemistry**

   Number of Credits: **3**  Total hrs/week: **3**

   Lecture: ✓  Lab: □  Recitation: □  Seminar: □

   For Independent study courses:
   Research: □  Field experience: □
   Clinical Practice: □  Internship: □
   Practicum: □  Independent Course Work: □

3. Semester and year when course will first be offered: **Spring 2012**

4. Catalog Description (please limit to 50 words):
   This course provides quantitative/mathematical understanding of kinetics and thermodynamics describing chemical reactions, including mathematical applications and problem solving skills related to theories necessary to understand the central role of chemistry for all molecular sciences. Math 220 is strongly recommended as a co- or prerequisite.

5. Check if appropriate: Humanities: □  Social Science: □ (meets minimum degree requirements)

6. Check if appropriate: □
   This course will be cross listed with: _____
   Rationale for cross listing: _____
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.
   **no**

   b) Please explain overlap with any existing courses.
Proposal for a New Course

8. Prerequisites (or other restrictions):
   Students who fail either Hons 263 or Hons 263L will be encouraged to take 112 / CHEM 112L in place of the HONS 264 / HONS 264L. Math 220 is strongly recommended as a co- or pre-requisite.

9. Rationale/justification for course (consider the following issues):
   a) What are the goals and objectives of the course?
      This is the final part of a four course sequence designed to prepare students in all scientific disciplines to appreciate molecular processes that are central to all scientific disciplines. This course provides a mathematical basis for describing reaction equilibria and kinetics which control the outcome of all chemical reactions.
   b) How does the course support the mission statement of the department and the organizing principles of the major?
      The lecture courses will stress critical thinking skills development over rote memorization, although fundamental facts and theories will necessarily be presented. The lectures will be designed to challenge student understanding of fundamental concepts, then hold students accountable for knowing those concepts in development of new concepts. It is felt that the progression of this four course sequence will make the fundamentals of chemistry, as used in other science courses like physics, geology and biology, more comprehensible and of greater service to the students and their future learning.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
    One of two options that satisfies the completion the first two year-long course sequences required of majors in Chemistry and Biochemistry
    b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:
        N/A

11. Method of teaching:
    Traditional lecture style course.

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:
    A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4
Proposal for a New Course

course Hons sequence had completed Hons 264. For chemistry / biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:
For HONS 264 the lead instructor in the lecture will be Dr. Donato. Other faculty in the department will be invited to make “guest lectures” on special topics related to their undergraduate research projects that will augment content covered in the course.

c) Frequency of offering:
   each fall: ☐
   each spring: ☒
   every two years: ☐
   every three years: ☐
   other ☐ (Explain): In the Spring, but the first offering will not be until Spring 2012, for students who started in HONS 163 in Fall 2010.

13. Requirements for additional resources made necessary by this course:

   a) Staff: none

   b) Budget: none

   c) Library: none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

   a) ☐ yes ☒ no

   b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

264 Honors Chemical Principles: Mathematical Treatment of Equilibrium and Kinetics, Introduction to Nuclear Chemistry
Proposal for a New Course

Instructor: Dr. Henry Donato
Office: NSCB 304; Office Hours: TBA
e-mail: donatoh@cofc.edu
Phone: 953-8094

Description of Course: The continuation course from Honors Chemistry 263. This course provide the quantitative perspective and explanation of the qualitatively developed theories and principles from Hons 162-263 and serves as the capstone of the two-year sequence of Honors Chemistry courses.

Co-requisites and prerequisites: Math 120 is a prerequisite, and Math 220 is strongly recommended as a co- or prerequisite. D+ or higher in HONS 263/263L or permission of Honors College and instructor. Honors 264L is a co-requisite.


Coverage

Physical Properties of Solutions
Chemical Kinetics
Chemical Equilibrium
Acids and Bases
Acid-Base Equilibria and Solubility Equilibria
Entropy, Free Energy, and Equilibrium
Electrochemistry
Nuclear Chemistry

Class policies: Attendance at all class meetings is required, although roll will not be recorded. You are responsible for knowing what is said in class as well as topics covered in the text. Please bring a calculator to all lectures and examinations as the course requires the use of a calculator. It is your responsibility to have one that can perform logarithmic and exponential functions. I cannot provide one if you forget yours during an examination or quiz. Homework problems from the text will be suggested but not collected. These are for your benefit and are intended as guides for material that may appear on the examinations and quizzes.

Grading Scheme: 4 Examinations, 70%; Final Exam, 30%

Grading Scale: A, 92-100; A–, 90-91; B+, 88-89; B, 82-87; B–, 80-81; C+, 78-79; C, 72-77; C–, 70-71; D+, 68-69; D, 62-67; D–, 60-61; F, below 60

Student Conduct: The Honor system is in effect in all your efforts for this course. Cheating will not be tolerated. Please refer to the Department’s policy on Scientific Integrity for more information. By enrolling in this course, you are
Proposal for a New Course

agreeing to abide by the Departmental policy on Scientific Integrity. You are not competing against everybody else in the class nor is there a set number of grades that will be given. It should be your objective to do the best you can on all the work.

Final Examination Information: The final examination is a standardized examination and was prepared by the American Chemical Society.
Proposal for a New Course

14. Signature of Department Chair or Program Director:
______________________________________________________________
Date: ________________________

15. Signature of Dean of School:
______________________________________________________________
Date: ________________________

16. Signature of Provost:
______________________________________________________________
Date: ________________________

17. Signature of Business Affairs Official
______________________________________________________________
Date: ________________________

18. Signature of Curriculum Committee Chair
______________________________________________________________
Date: ________________________

19. Signature of Faculty Senate Secretary:
______________________________________________________________
Date Approved by Senate: ________________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: HONS

2. Course Number and Title: 264L Honors Chemical Principles Laboratory: Mathematical Treatment of Equilibrium and Kinetics, Introduction to Nuclear Chemistry

   Number of Credits: 3   Total hrs/week: 3

   Lecture: ☒  Lab: ☐  Recitation: ☐  Seminar: ☐

For Independent study courses:
   Research: ☐  Field experience: ☐
   Clinical Practice: ☐  Internship: ☐
   Practicum: ☐  Independent Course Work: ☐

3. Semester and year when course will first be offered: Spring 2012

4. Catalog Description (please limit to 50 words):
   This course provides quantitative/mathematical understanding of kinetics and thermodynamics describing chemical reactions, including mathematical applications and problem solving skills related to theories necessary to understand the central role of chemistry for all molecular sciences. Math 220 is strongly recommended as a co- or prerequisite.

5. Check if appropriate: Humanities: ☐  Social Science: ☐  (meets minimum degree requirements)

6. Check if appropriate: ☐
   This course will be cross listed with: ______
   Rationale for cross listing: ______
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal.
   no

   b) Please explain overlap with any existing courses.

This form was approved by FCC on 5/19/2009 and replaces all others.
Proposal for a New Course

8. Prerequisites (or other restrictions):
Students who fail either Hons 263 or Hons 263L will be encouraged take 112 / CHEM 112L in place of the HONS 264 / HONS 264L. Math 220 is strongly recommended as a co- or pre-requisite.

9. Rationale/justification for course (consider the following issues):

a) What are the goals and objectives of the course?
This is the final part of a four course sequence designed to prepare students in all scientific disciplines to appreciate molecular processes that are central to all scientific disciplines. This course provides a mathematical basis for describing reaction equilibria and kinetics which control the outcome of all chemical reactions.

b) How does the course support the mission statement of the department and the organizing principles of the major?
Students will develop more fully a working knowledge of the scientific method utilizing mathematical analysis of experimentally obtained data.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
One of two options that satisfies the completion the first two year-long course sequences required of majors in Chemistry and Biochemistry

b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:
N/A

11. Method of teaching:
Traditional laboratory style course.

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:
A consequence of this new HONS course sequence will be that these students will not have an opportunity to complete Chem. 221 (Quantitative Analysis) in the sophomore year. Chem. 221, which has Chem. 112 as a pre-requisite, could not be taken until the students in the proposed 4 course Hons sequence had completed Hons 264. For chemistry / biochemistry majors, this most likely means taking Chem. 221 in the same semester as taking Chem. 341 (Physical Chemistry). For Geology, Biology, Physics majors, it means, if taking Chem. 221, taking it at the same time as upper level course(s) in the major.
Proposal for a New Course

b) Address potential shifts in staffing of the department as it relates to the offering of this course:

For HONS 264 the lead instructor in the lecture will be Dr. Donato. Dr. Wyatt (instructor for HONS 263) will sit in on some of the lectures to stay in touch with the course development and to be an initial familiar face for students taking this after taking the previous course, HONS 263. Other faculty in the department will be invited to make “guest lectures” on special topics related to their undergraduate research projects that will augment content covered in the course.

c) Frequency of offering:

- each fall: [x]
- each spring: [x]
- every two years: [ ]
- every three years: [ ]
- other [x] (Explain): In the Spring, but the first offering will not be until Spring 2012, for students who started in HONS 163 in Fall 2010.

13. Requirements for additional resources made necessary by this course:

a) Staff: none

b) Budget: none

c) Library: none

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

a) [ ] yes  [x] no

b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

Instructor: Dr. Wendy Cory
Office: NSCB 318; Office Hours: to be announced
E-mail: coryw@cofc.edu
Phone: 953-5587

Description of Course: This course in chemistry will emphasize mathematical
Proposal for a New Course

treatment of data acquired by the student for the purpose of demonstrating the scientific method and reliability of scientific processes.

Co-requisites and prerequisites: Honors 264 must be taken concurrently. Math 120 is a prerequisite, and Math 220 is strongly recommended as a co- or prerequisite.

ATTENDANCE AND GRADING POLICY: Students will sometimes work with lab partners and all data belongs to the group. Lab partners may interpret data and discuss results among the members of their group but all lab reports, examinations, and graded homework must represent an individual effort. When in doubt about any assignment, see the instructor for help. Attendance to the scheduled laboratory meeting is the responsibility of each student. Any laboratory missed without a certified excuse will result in the grade of 0. The grade of “WA” will be used for any student with three or more unexcused absences. Students will abide by the College of Charleston Honor Code Policy, the Departmental Policy on Scientific Integrity, and the departmental policy on laboratory safety.

Grading Scale:  100-98, A+; 97-93, A; 92-90, A-; 89-88, B+; 87-83, B; 82-80, B-; 79-78, C+; 77-73, C; 72-70, C-; 69-68, D+; 67-65, D; 64-00, F

Grade Determination The overall course grade will be calculated as follows: 10% Conduct, 45% reports, 10% notebook, 35% exam.

Electronic Device Policy: You may use electronic devices during labs, but not during quizzes or exams. Cell phones must be turned off (no audible alarms) during the pre-lab lectures. Calculators will not be allowed during tests and quizzes. If you are a little rusty with simple operations of addition, subtraction, multiplication, and division, you should practice before the tests and quizzes. It is recommended that you work problems, when studying, the way you will have to work them during quizzes or on tests.

Laboratory;

Last day to withdraw with the grade of "W": x, xx, 2012

Text: prepared by the instructor based on published procedures.

Calorimetric Determination for Enthalpy of Solution
Neutralization Equivalent for Determination of a Naturally Occuring Carboxylic Acid with Comparison to MS Determination
Experimental Determination of the Rate Law for a Substitution Reaction
Biological Catalysts and Rate Evaluation for Hydrolysis
Quantitative Measurement of Concentration Effects to Affect Chemical Equilibria
Titrimetric Analysis to Determine Amino Acid Structure in Aqueous Solutions
Ksp and Solubility
Proposal for a New Course

Titration of a Dibasic Phosphate Salt
Quantitative Applications of Electrolysis
Kinetics of Radioactive Decay
Kinetics of the Metabisulfite - Iodate Reaction
Solid State Chemistry - Preparation of Nanomaterials
Laboratory Final Examination
Proposal for a New Course

14. Signature of Department Chair or Program Director:

______________________________________________________________

Date: ________________________

15. Signature of Dean of School:

______________________________________________________________

Date: ________________________

16. Signature of Provost:

______________________________________________________________

Date: ________________________

17. Signature of Business Affairs Official

______________________________________________________________

Date: ________________________

18. Signature of Curriculum Committee Chair

______________________________________________________________

Date: ________________________

19. Signature of Faculty Senate Secretary:

______________________________________________________________

Date Approved by Senate: ________________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.