### Cover Sheet: Request 13705

**CHM2096L: Chemistry Lab 2 for Engineers**

#### Info
- **Process**: Course|New|Ugrad/Pro
- **Status**: Pending at PV - University Curriculum Committee (UCC)
- **Submitter**: Maria Korolev korolev@chem.ufl.edu
- **Created**: 3/1/2019 2:45:35 PM
- **Updated**: 4/5/2019 7:44:59 AM
- **Description of request**: This is a request to create a new course: CHM2096L.

#### Actions

<table>
<thead>
<tr>
<th>Step</th>
<th>Status</th>
<th>Group</th>
<th>User</th>
<th>Comment</th>
<th>Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department</strong></td>
<td>Approved</td>
<td>CLAS - Chemistry 011606000</td>
<td>Alexander Angerhofer</td>
<td></td>
<td>3/1/2019</td>
</tr>
<tr>
<td><strong>CTaylor_Lettersofsupport.pdf</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3/1/2019</td>
</tr>
<tr>
<td><strong>College</strong></td>
<td>Conditionally Approved</td>
<td>CLAS - College of Liberal Arts and Sciences</td>
<td>Joseph Spillane</td>
<td>The College Curriculum Committee conditionally approves this request, with the following: please fix the grade scale to show a range.</td>
<td>3/27/2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>Department</strong></td>
<td>Approved</td>
<td>CLAS - Chemistry 011606000</td>
<td>Alexander Angerhofer</td>
<td>Grade scale has been changed to show ranges.</td>
<td>4/4/2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>College</strong></td>
<td>Approved</td>
<td>CLAS - College of Liberal Arts and Sciences</td>
<td>Joseph Spillane</td>
<td></td>
<td>4/5/2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>University Curriculum Committee</strong></td>
<td>Pending</td>
<td>PV - University Curriculum Committee (UCC)</td>
<td></td>
<td></td>
<td>4/5/2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>Statewide Course Numbering System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>Office of the Registrar</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>Student Academic Support System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>Catalog</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
<tr>
<td><strong>College Notified</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No document changes</td>
<td></td>
</tr>
</tbody>
</table>
Course|New for request 13705

Info

Request: CHM2096L: Chemistry Lab 2 for Engineers
Description of request: This is a request to create a new course: CHM2096L.
Submitter: Maria Korolev korolev@chem.ufl.edu
Created: 3/27/2019 12:27:32 PM
Form version: 3

Responses

Recommended Prefix
Enter the three letter code indicating placement of course within the discipline (e.g., POS, ATR, ENC). Note that for new course proposals, the State Common Numbering System (SCNS) may assign a different prefix.

Response:
CHM

Course Level
Select the one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

Response:
2

Number
Enter the three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles. For new course requests, this may be XXX until SCNS assigns an appropriate number.

Response:
096

Category of Instruction
Indicate whether the course is introductory, intermediate or advanced. Introductory courses are those that require no prerequisites and are general in nature. Intermediate courses require some prior preparation in a related area. Advanced courses require specific competencies or knowledge relevant to the topic prior to enrollment.

Response:
Introductory

• 1000 and 2000 level = Introductory undergraduate
• 3000 level = Intermediate undergraduate
• 4000 level = Advanced undergraduate
• 5000 level = Introductory graduate
• 6000 level = Intermediate graduate
• 7000 level = Advanced graduate

4000/5000 and 4000/6000 levels = Joint undergraduate/graduate (these must be approved by the UCC and the Graduate Council)
Lab Code
Enter the lab code to indicate whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

Response:
L

Course Title
Enter the title of the course as it should appear in the Academic Catalog.

Response:
Chemistry Lab 2 for Engineers

 Transcript Title
Enter the title that will appear in the transcript and the schedule of courses. Note that this must be limited to 21 characters (including spaces and punctuation).

Response:
Chm Lab 2 for Eng

Degree Type
Select the type of degree program for which this course is intended.

Response:
Baccalaureate

Delivery Method(s)
Indicate all platforms through which the course is currently planned to be delivered.

Response:
On-Campus

Co-Listing
Will this course be jointly taught to undergraduate, graduate, and/or professional students?

Response:
No

Co-Listing Explanation
Please detail how coursework differs for undergraduate, graduate, and/or professional students. Additionally, please upload a copy of both the undergraduate and graduate syllabus to the request in .pdf format.

Response:
N/A

Effective Term
Select the requested term that the course will first be offered. Selecting "Earliest" will allow the course to be active in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's best projection. Courses cannot be implemented retroactively, and therefore the actual effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires 2 to 6 weeks after approval of the course at UF.

Response: Spring

Effective Year
Select the requested year that the course will first be offered. See preceding item for further information.

Response: 2020

Rotating Topic?
Select "Yes" if the course can have rotating (varying) topics. These course titles can vary by topic in the Schedule of Courses.

Response: No

Repeatable Credit?
Select "Yes" if the course may be repeated for credit. If the course will also have rotating topics, be sure to indicate this in the question above.

Response: No

Amount of Credit
Select the number of credits awarded to the student upon successful completion, or select "Variable" if the course will be offered with variable credit and then indicate the minimum and maximum credits per section. Note that credit hours are regulated by Rule 6A-10.033, FAC. If you select "Variable" for the amount of credit, additional fields will appear in which to indicate the minimum and maximum number of total credits.

Response: 1

S/U Only?
Select "Yes" if all students should be graded as S/U in the course. Note that each course must be entered into the UF curriculum inventory as either letter-graded or S/U. A course may not have both options. However, letter-graded courses allow students to take the course S/U with instructor permission.

Response: No

Contact Type
Select the best option to describe course contact type. This selection determines whether base hours or
headcount hours will be used to determine the total contact hours per credit hour. Note that the headcount hour options are for courses that involve contact between the student and the professor on an individual basis.

Response:
Regularly Scheduled

• Regularly Scheduled [base hr]
• Thesis/Dissertation Supervision [1.0 headcount hr]
• Directed Individual Studies [0.5 headcount hr]
• Supervision of Student Interns [0.8 headcount hr]
• Supervision of Teaching/Research [0.5 headcount hr]
• Supervision of Cooperative Education [0.8 headcount hr]

Contact the Office of Institutional Planning and Research (352-392-0456) with questions regarding contact type.

Weekly Contact Hours
Indicate the number of hours instructors will have contact with students each week on average throughout the duration of the course.

Response:
3

Course Description
Provide a brief narrative description of the course content. This description will be published in the Academic Catalog and is limited to 50 words or fewer. See course description guidelines.

Response:
Laboratory experiments designed to complement CHM2096

Prerequisites
Indicate all requirements that must be satisfied prior to enrollment in the course. Prerequisites will be automatically checked for each student attempting to register for the course. The prerequisite will be published in the Academic Catalog and must be formulated so that it can be enforced in the registration system. Please note that upper division courses (i.e., intermediate or advanced level of instruction) must have proper prerequisites to target the appropriate audience for the course.

Response:
(CHM2045(C) or CHM2095(C)) & (CHM2045L(C) or CHM2095L(C)) & ENG college

Completing Prerequisites on UCC forms:

• Use "&" and "or" to conjoin multiple requirements; do not use commas, semicolons, etc.
• Use parentheses to specify groupings in multiple requirements.
• Specifying a course prerequisite (without specifying a grade) assumes the required passing grade is D-. In order to specify a different grade, include the grade in parentheses immediately after the course number. For example, "MAC 2311(B)" indicates that students are required to obtain a grade of B in Calculus I. MAC2311 by itself would only require a grade of D-.
• Specify all majors or minors included (if all majors in a college are acceptable the college code is sufficient).
• Permission of department" is always an option so it should not be included in any prerequisite or co-requisite.

Example: A grade of C in HSC 3502, passing grades in HSC 3057 or HSC 4558, and major/minor in PHHP should be written as follows:
HSC 3502(C) & (HSC 3057 or HSC 4558) & (HP college or (HS or CMS or DSC or HP or RS minor))
Co-requisites
Indicate all requirements that must be taken concurrently with the course. Co-requisites are not checked by the registration system.

Response:
CHM2096

Rationale and Placement in Curriculum
Explain the rationale for offering the course and its place in the curriculum.

Response:
This is the second semester of the chemistry lab for engineers sequence, following CHM2095L which was approved last year. This course is part of the ongoing effort to improve retention of students in engineering by showing the chemistry content in context as it applies to engineering. This course will complement the second semester of general chemistry for engineers, CHM2096.

Course Objectives
Describe the core knowledge and skills that student should derive from the course. The objectives should be both observable and measurable.

Response:
At the end of the course, students should be able to:
- Demonstrate laboratory techniques
- Follow and design experimental procedures
- Record, graph, and interpret data
- Apply chemical concepts to solve problems
- Relate chemistry to real world problems.

Course Textbook(s) and/or Other Assigned Reading
Enter the title, author(s) and publication date of textbooks and/or readings that will be assigned. Please provide specific examples to evaluate the course.

Response:
None. The lab manual will be provided through Canvas.

Weekly Schedule of Topics
Provide a projected weekly schedule of topics. This should have sufficient detail to evaluate how the course would meet current curricular needs and the extent to which it overlaps with existing courses at UF.

Response:
Week 1: No lab during add/drop
Week 2: Lab 1: Manage the Nitrogen Cycle
Week 3: Lab 2: Engineer Better Medicines Part 1
Week 4: Lab 2: Engineer Better Medicines Part 2
Week 5: Lab 2: Engineer Better Medicines Part 3
Week 6: Lab 3: Engineer Tools for Scientific Discovery Part 1
Week 7: Lab 3: Engineer Tools for Scientific Discovery Part 2
Week 8: Lab 3: Engineer Tools for Scientific Discovery Part 3
Week 9: Lab 4: Restore and Improve Urban Infrastructure Part 1
Week 10: Lab 4: Restore and Improve Urban Infrastructure Part 2
Week 11: Lab 4: Restore and Improve Urban Infrastructure Part 3
Week 12: Lab Practical
Week 13: Makeup week

Each of the laboratory experiments are designed around one of the National Academy of Engineering Grand Challenges. Each lab is named after these grand challenges. Aside from the first introductory lab, the remaining labs span 3 weeks each.

Links and Policies
Consult the syllabus policy page for a list of required and recommended links to add to the syllabus. Please list the links and any additional policies that will be added to the course syllabus. Please see: syllabus.ufl.edu for more information

Response:
Honor Code: https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/
Disabilities Accomodations: http://www.dso.ufl.edu/drc/
U Matter, We Care: umatter@ufl.edu
Evaluations: https://evaluations.ufl.edu
Attendance Policy: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx
Grading Policy: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx
General Education Requirements

Grading Scheme
List the types of assessments, assignments and other activities that will be used to determine the course grade, and the percentage contribution from each. This list should have sufficient detail to evaluate the course rigor and grade integrity. Include details about the grading rubric and percentage breakdowns for determining grades.

Response:
Grading Scheme:
Safety Quiz: 5%
Surveys: 5%
Pre-Lab Quizzes: 20%
Lab assignments: 50%
Lab Practical: 20%

92.00%-100% A, 88.00%-91.99% A-, 84.00%-87.99% B+, 80.0%-83.99% B, 76.00%-79.99% B-, 72.00%-75.99% C+, 68.00%-71.99% C, 64.00%-67.99% D+, 60.00%-63.99% D, 0%-59.99% E

Instructor(s)
Enter the name of the planned instructor or instructors, or “to be determined” if instructors are not yet identified.

Response:
Maria Korolev
May 26, 2016

Dr. Kent Crippen  
College of Education  
University of Florida

Dear Dr. Crippen,

On behalf of the Herbert Wertheim College of Engineering, I enthusiastically support the proposal, ChANgE Chem Lab: Cognitive Apprenticeship for Engineers in Chem Lab, submitted by the collaborative group from our Colleges of Engineering, Liberal Arts and Sciences, and Education at the University of Florida. This proposal addresses a critical need in engineering education by developing best practices that directly target retention of students in engineering.

Attrition of students from engineering at UF mirrors national statistics that report that students leaving engineering, especially those underrepresented in engineering, do so during the first two years of study. However, students are not exposed to engineering during the first two years as they build a strong foundation in science and mathematics, such as general chemistry. Your project will address this issue directly by providing engineering application to general chemistry with a method that is transferable to other disciplines and easily disseminated. In fact, we would be most eager to pilot examples of your content in our summer freshman bridge program’s chemistry instruction as you prepare for launching your efforts in the fall and spring chemistry classes. We will also provide you retention-tracking data from our student database to aid you in the assessment of your methods.

Sincerely,

[Signature]

Dr. Curtis Taylor, Associate Dean  
Herbert Wertheim College of Engineering