



NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Columbia College

Program Title: Bachelor of Science in Chemistry

Degree/Certificate: Bachelor of Science

Options: N/A

Delivery Site(s): 5040

CIP Classification: 40.0501

*CIP code can be cross-referenced with programs offered in your region on MDHE's program inventory higher.ed.mo.gov/ProgramInventory/search.jsp

Implementation Date: August 2014

Cooperative Partners: N/A

*If this is a collaborative program, form CL must be included with this proposal

AUTHORIZATION:

Dr. Terry B. Smith, Interim President		4.2.14
Name/Title of Institutional Officer	Signature	Date

Misty Bush, Director, Office of Institutional Compliance	(573) 875-7697
Person to Contact for More Information	Telephone



STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full Time	15	15	16	16	17
Part Time	6	6	7	7	8
Total	21	21	23	23	25

Please provide a rationale regarding how student enrollment projections were calculated:

The calculations for the projected enrollments for the Bachelor of Science in Chemistry degree were calculated based on actual enrollments for the Bachelor of Arts in Chemistry program during the 2012-2013 Academic Year. There were a total of 15 students enrolled full-time in the Bachelor of Arts in Chemistry program during the 2012-2013 Academic Year and this is reflected in the enrollment projections for Year 1. An increase of approximately 3% was applied for each projected year. The same methodology was used to determine the part-time projected enrollment. There were a total of 6 students enrolled in the Bachelor of Arts in Chemistry program during the 2012-2013 Academic Year and this was reflected in the enrollment projections for Year 1. An increase of approximately 3% was applied for each projected year.

Provide a **rationale** for proposing this program, including **evidence of market demand and societal need supported by research**:

Because the study of chemistry provides students with both the knowledge of the composition, properties and transformations of chemicals and the ability to analyze, synthesize and quantitate, chemistry is a science central to all scientific fields. The primary mission of the Chemistry major at Columbia College is to prepare students for employment in the chemical industry or in chemical education by providing them with a clear understanding of the underlying principles of chemistry and the ability to use analytical skills to produce this insight. Because the principles

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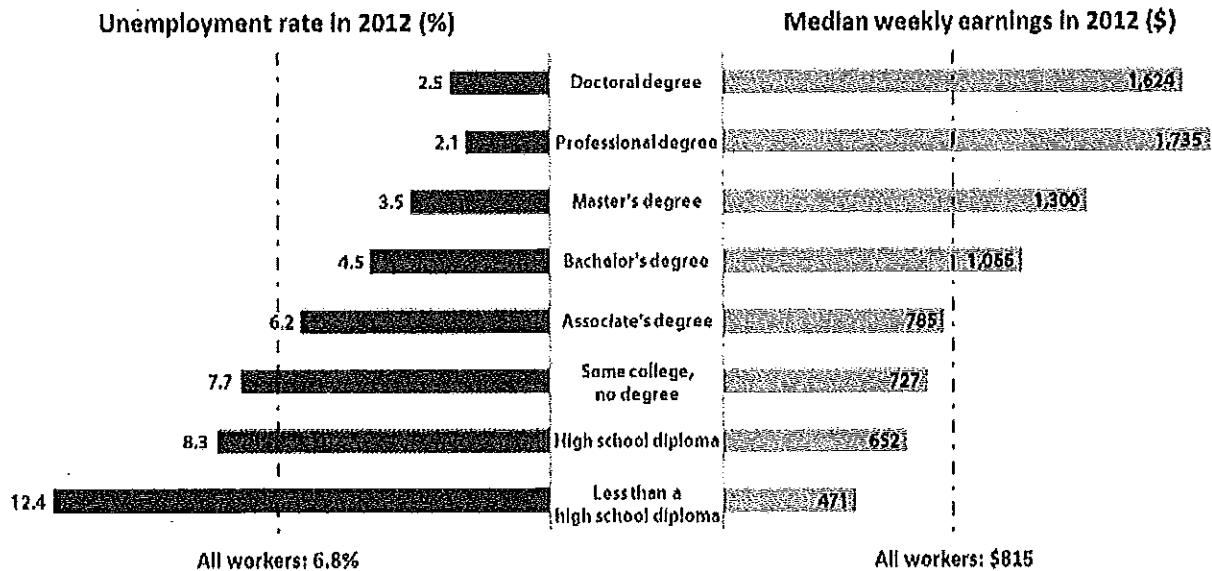
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and theories of chemistry are emphasized in the program, students are also furnished with a strong foundation for graduate and professional study in chemistry or health-related professions.

Students will be provided back to their community and gain personal satisfaction, and potential increase of income. Students earning the degree are providing a long-term investment for society. Education will allow for improvements, advancements, and sustainability, which will result in a return of investment for society as a whole.

Education Pays



Source: Bureau of Labor Statistics, Current Population Survey



A. Total credits required for graduation: 120 semester credit hours

B. Residency requirements, if any: Complete 24 semester hours in residency during the last 36 semester hours of coursework.

C. General education: Total credits: 38-41 semester credit hours.

Courses (specific courses OR distribution area and credits):

Course Number	Credits	Course Title
PHIL 330	3	Ethics OR
ENVS/PHIL 331	3	Environmental Ethics

D. Major requirements: Total credits: 62 Semester Credit Hours. Please see the attached curriculum.

Course Number	Credits	Course Title

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E. Free elective credits:

8 semester hours of Chemistry Electives and 6-9 Semester Hours of Electives

(Sum of C, D, and E should equal A.)

F. Requirements for thesis, internship or other capstone experience:

CHEM 490 Senior Seminar (3)

G. Any unique features such as interdepartmental cooperation:

Students are required to meet 3 semester credit hours for the Multicultural Requirement.

Bachelor of Science in Chemistry Course Outline

1. General Education Requirements

(38-41 semester hours)

Ethics Requirement

PHIL 330 Ethics (3) or
ENVS/
PHIL 331 Environmental Ethics (3)

2. Multicultural Requirement

(3 semester hours)

3. Core Requirements

(62 semester hours)

CHEM 110 Chemistry I (3)
CHEM 111L Introduction to Chemistry Laboratory Experience (2)
CHEM 112 Chemistry II (3)
CHEM 112L Chemistry II Laboratory Experience (2)
CHEM 306 Analytical Chemistry I (5)
CHEM 307 Analytical Chemistry II (5)
CHEM 310 Organic Chemistry I (3)
CHEM 310L Organic Chemistry I Laboratory (2)
CHEM 312 Organic Chemistry II (3)
CHEM 312L Organic Chemistry II Laboratory (2)
CHEM 322 Inorganic Chemistry (3)
CHEM 401 Physical Chemistry (3)
CHEM 412 Advanced Experimental Chemistry (3)
CHEM 490 Senior Seminar (3)
MATH 201 Calculus and Analytical Geometry I (5)
MATH 222 Calculus and Analytical Geometry II (5)
PHYS 211 Calculus-Based Physics I (5) or
PHYS 111 College Physics I (3) and
PHYS 111L College Physics I Lab (2)
PHYS 212 Calculus-Based Physics II (5) or
PHYS 112 College Physics II (3) and
PHYS 112L College Physics II Lab (2)

4. Chemistry Electives

(8 semester hours*)

CHEM 230 Environmental Toxicology and Chemistry (3)
CHEM 230L Environmental Toxicology and Chemistry Laboratory (2)
CHEM 399 Science Internship (1-3 hours)
CHEM 420 Biochemistry I (3)
CHEM 420L Biochemistry I Laboratory (2)
CHEM 422 Biochemistry II (3)
CHEM 425 Forensic Chemistry I (3)
CHEM 425L Forensic Chemistry I Laboratory (2)

CHEM 433 Topics (3)
CHEM 499 Advanced Science Internship (1-3)
CHEM Directed Study 255, 256, 257, 355, 356, 357, 455, 456, 457 (1-5)

*Two of these hours must be from laboratory courses: CHEM 230L, CHEM 420L, or CHEM 425L; a maximum of three of these hours may be obtained from internships (CHEM 399/499).

5. Electives
(6-9 semester hours)

Total Semester Hours: 120



PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name Columbia College
Program Name Bachelor of Science in Chemistry
Date 4/2014

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

1. Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.

Columbia College admission requirements are considered "moderately selective."

Day Program: The primary factors considered in the admissions process are overall high school or secondary school performance (grades) and performance on standardized tests such as the ACT or SAT I (test scores). Admission is generally granted to students who rank in the top half of their graduating class or who score at the 50th percentile or above on the ACT, SAT I, HiSET or equivalent. Students must also have a cumulative minimum high school grade point average of 2.5. Columbia College accepts college credit from these programs: CLEP, Advanced Placement (AP), International Baccalaureate (IB), Dual Credit, Proficiency Exams, DANTES, and Credit for Prior Learning.

Evening Program: Columbia College wants to make the admission process as streamlined as possible. If you have a high school diploma; HiSET or equivalent; or previous college experience, complete the printable application or apply online and send transcripts from high school and all colleges and universities you have attended. The Evening Campus admission requirements are considered "moderately selective." The Admissions Office will consider your overall high school performance, HiSET or equivalent scores, and any college coursework. Your academic past is important, but so are your life accomplishments, so personal letters of recommendation and resumes are welcome additions to your application file. New freshmen requirements include minimum 50th percentile class rank or test score (ACT, SAT, HiSET or equivalent) and 2.0 cumulative grade point average. Freshman applicants who graduated from high school more than two years ago typically are not required to submit ACT or SAT scores. Transfer students must have earned a minimum 2.0 cumulative grade point average.

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If you have accrued more than 24 college credits, your high school transcript will not likely be required. There is a \$35 application fee, which is nonrefundable.

Online Campus: Current students enrolled at Columbia College, may take online courses without readmission to the Columbia College Online Campus. Students who have never attended the Online Campus, can apply for admission at the campus nearest them. Remote students not near a Columbia College campus can apply online for admission. Students may be admitted upon presentation of any one of the following: high school; diploma; successful completion of the HiSET or equivalent; evidence of satisfactory college work.

Nationwide Campus: Students may be admitted upon presentation of any one of the following: high school diploma; successful completion of the HiSET or equivalent; evidence of satisfactory college work. Potential students who lack a requirement for admission may be considered on an individual basis. Individuals so considered must give evidence that they can successfully meet the demands of Columbia College.

- Characteristics of a specific population to be served, if applicable.
Columbia College serves traditional students at its Day Campus. Columbia College specializes in adult education and military education. Our top military education and adult continuing education opportunities are available at 34 campuses nationwide. With smaller class sizes and flexible class schedules, we make earning your college degree as convenient as it can possibly be around your daily business and family obligations. We serve nearly 25,000 students each year in 13 states, with 18 campuses being conveniently located on military bases.

2. Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.
Faculty must have a minimum of a master's degree in the appropriate field including at least three courses directly related to the content area; many of the faculty members have doctorates or other terminal degrees. All faculty teaching for Columbia College at off-campus locations are part-time adjuncts. A core of recurring faculty teaches on a regular basis and almost all teach in at least two of the five sessions per year.

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- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.
Full-time faculty can teach 12 credit hours or less in a given session. Adjunct faculty can teach no more than 9 credit hours in a given session, but no more than 6 in-seat credit hours a session.
- Expectations for professional activities, special student contact, teaching/learning innovation. *Full-time faculty members are required to have 5 hours a week of office hours designated for their students. Full-time faculty members are required to participate in professional development. Adjunct faculty members are required to provide their contact information to their students.*

3. Enrollment Projections

- Student FTE majoring in program by the end of five years.
(Please see attached Student Enrollment Projections)
- Percent of full time and part time enrollment by the end of five years.
(Please see attached Student Enrollment Projections)

4. Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation.
Associate 3 Year Mark – 100% Bachelor's 3 Year Mark – 10%
Associate 5 Year Mark – 100% Bachelor's 5 Year Mark – 100%

(NOTE: The above percentages are estimates because Columbia College does not track how many students graduate with an Associate or Bachelor's degree specifically based on the time they begin their coursework. However, it is estimated that 100% of students who begin working on an Associate degree should have the degree completed at the three year mark and 10% of students should have a Bachelor's degree completed at the three year mark. It is estimated that 100% of students who begin working on an Associate's degree should have the degree completed within five years and 100% of students should have a Bachelors degree completed at the five year mark.)

- Special skills specific to the program.
(Please see attached Student Enrollment Projections)

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- Proportion of students who will achieve licensing, certification, or registration.
(Please see attached Student Enrollment Projections)
- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.
Columbia College's goal is to have all students score at least in the 75th percentile on all normed tests.
- Placement rates in related fields, in other fields, unemployed.
N/A
- Transfer rates, continuous study.
N/A

5. Program Accreditation

- Institutional plans for accreditation, if applicable, including accrediting agency and timeline.
If there are no plans to seek specialized accreditation, please provide a rationale.
The degree program being proposed has been approved by the Higher Learning Commission.

6. Alumni and Employer Survey

- Expected satisfaction rates for alumni, *including timing and method of surveys.*
N/A
- Expected satisfaction rates for employers, including timing and method of surveys.
N/A

7. Institutional Characteristics

- Characteristics demonstrating why your institution is particularly well-equipped to support the program.
Please find Institutional Characteristics at Attachment 1.