

Graduate Executive Committee
May 5, 2017
Minutes

Attendees:

Voting Members: Charles Zhou, Mandi Elder, Meghan Lybecker, Karen Livesey, Jeff Ferguson, Brian McAllister, David Havlick, Andrew Ketsdever, Al Schoffstall, Jeff Spicher, Steve Tragesser, Linda Button, Sylvia Mendez, Brandon Gavett, Edward Chow, Don Klingner

Non-voting Members: Whitney Porter, Mandy Hanson, Ron Koch, Steve Miller, Jose Mora, Wang Chao, Barbara Frye, Kelli Klebe, KrisAnn McBroom

- Mandy Hanson Global Engagement Office update (see enclosed flyer)
- COE Graduate certificate proposal- Master Literacy- Barbara Frye (see enclosed proposal)
 - The department was approached by school district 49 to create this certificate to meet needs of teachers. All courses are already being taught by the program and a proforma for additional support was submitted to EVCAA and VCAF. Program will be offered at school district.
 - The GEC unanimously voted to recommend approval of the graduate certificate, Master Literacy.
 - Note: the name of the certificate was updated after approval to “Literacy Teacher Certification”
- Proposal for non-thesis option for Chemistry and Biochemistry- Al Schoffstall (see enclosed proposal)
 - The student in the non-thesis option would enroll in a capstone course as well as complete a research paper. There will still be a thesis option as well.
 - The GEC unanimously voted to recommend approval of the non-thesis option for Chemistry and Biochemistry.
- Dean Report
 - **Heads up:** New application is up. Admissions is getting calls about login credentials; people are trying to use their old login credentials and they need to create new ones or go to the old system, which is still available for those who already started an application. Admissions’ staff have emailed instructions to you and departmental staff
 - ComSciCon: the Communicating Science workshop for graduate students (see flyer)
 - September 23-24th at University of Colorado Boulder
 - UCCS has at least two all-expenses paid spots (2 best students from acceptance committee review gets awards)
 - June 1st deadline (extended to **June 15th**- competitive acceptance). **Please share with students.**
 - Graduate Faculty appointment deadlines
 - **Approvals for graduate faculty appointments must be received before course starts or the course does not count toward a student’s graduation requirements.**
 - Faculty qualifications beyond degrees (one degree above teaching level in the same discipline or terminal degree for discipline)
 - ‘Tests of experience’: each college needs one; please send copy to Graduate School
 - Tuition Grants
 - We had unused funds of \$60,000 (15% of available funds)
 - Request for additional funds (send to Graduate School by **Wednesday May 10**)
 - **June 1 deadline** for getting to Graduate School Dean your description of how these helped recruitment/retention (or suggest potential changes)

- **The Graduate School staff will be contacting you about whether or not students have confirmed acceptance of award**
- Out-of-State recruitment scholarships
 - Scholarships must be given to **new nonresident** students (including international students) who meet the eligibility criteria for two consecutive semesters starting Fall 2017 semester (may be spread over 3 semesters if program expect summer enrollment, but total amount of scholarship is the same).
 - **Deadline May 15**
 - **Criteria:** Student must be paying nonresident tuition rates, have a 3.33 or higher GPA, be enrolled full time (5 or more credits)
- New Graduate School Teaching Assistantships (see enclosed sheet)
 - The Graduate School has received new funding for AY 2017-2018 for teaching assistantships. The form description is attached and GEC members reviewed. Deans, department/unit/program chairs will receive a request to submit proposals to receive a teaching assistantship for the upcoming academic year.
- Process for change of degree (see enclosed document)
 - There is a draft campus process for requesting a change in degree type (e.g., change from MSc to MS; change from PhD in Engineering to PhD in Electrical and Computing Engineering. GEC members were asked for input on the draft process. The deans and associate deans will still need to review. Any such requested need to be approved by the regents.
- Graduate Student Research Showcase:
 - Total of 45 students presented posters, from 4 colleges in 14 disciplines.

College	Discipline
College of Letters, Arts and Sciences	Biology
	Mathematics
	Communication
	Physics
	Psychological Sciences
	Clinical Psychology
	History
College of Education	Educational Leadership, Research, and Policy
Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences	Sports Medicine
	Health Promotion
	Sports Nutrition
College of Engineering and Applied Sciences	Computer Science
	Electrical Engineering
	Mechanical Engineering



Graduate School

UNIVERSITY OF COLORADO COLORADO SPRINGS

Announcements:

Spring 2017 Commencement Friday May 12, 2017

LAS ceremony starts at 10:30 am

All other colleges' ceremony starts at 2:30

Fall 2017 Graduate School Welcome Reception: Monday August 14th 5:00-6:30, Berger Hall

Fall 2017 GEC Meetings (10:00-11:30; Dwire 204)

September 8; October 13; November 10; December 8

Spring 2018 GEC Meetings (10:00-11:30; locations Dwire 204)

February 9; March 9; April 13; May 4 (A week early due to commencement conflict)



Global Engagement Office

UNIVERSITY OF COLORADO **COLORADO SPRINGS**

Global Engagement Office Structure


The Global Engagement Office (GEO) at University of Colorado Colorado Springs supports the comprehensive internationalization of the UCCS community. Current core components of the office include:

- Intensive English Program
- Education Abroad: faculty/staff directed, semester, year, summer, internships abroad, volunteering abroad
- International Student & Scholar Advising: immigration advising, programming and support
- Short-term On-Campus Study Programs (*i.e. 1 or 2 week programs for intensive English or other area of study at UCCS*)
- University-wide Partnerships (*research, faculty/staff/student exchange, dual degree*)
- International linkages and international opportunities (*affiliations, hosting international visitors, Fulbright*)


UCCS Global Quick Facts

- 2 UCCS Faculty received Fulbright Scholarships in the 2015/2016 Academic Year (Dr. Geoffrey Ashton in India for Philosophy and Dr. Kirk Samelson in Germany for Law/Environmental Law)
- 264 total international students from 46 countries (graduate=124 / undergraduate=100 / IEP=14 / Exchange/Other=26) - Fall 2016
- 80 UCCS students abroad in 17 different countries for service learning, internships, and study programs in 4 world regions – 2015/2016 Academic Year
- International students contribute \$378.3 million to the Colorado economy and UCCS international students contributed \$9.5 million to Colorado Springs (2015-2016 www.nafsa.org/economicvalue OpenDoors Report)
- UCCS hosted 15 visiting scholars in 2015/2016 Academic Year. Two of these visiting scholars were on a Fulbright Scholarship from Sri Lanka and Russia.


Staff



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Updates

- Student International Travel Policy
- Faculty and Staff Directed Short-term abroad workshops
- Short-term lecturing opportunities
- Increased programming and support for international students and scholars
- Immigration advising for international students and Federal reporting requirements at GEO
- World Trade Center

UCCS ABROAD IN GUATEMALA

SERVICE LEARNING

SAN MARTIN JILOTEPEQUE, GUATEMALA

JANUARY 8-14, 2018

FCS 3890 CREDIT IS AVAILABLE THROUGH LANGUAGES AND CULTURES

PROGRAM FEE: \$1,299

SEE INFO LINK FOR TOTAL COSTS

PROGRAM INFORMATION:

UCCS is partnering with the organization Hug It Forward, a grassroots organization that promotes education and raises environmental awareness by empowering communities in Guatemala to build bottle schools. Bottle schools are constructed using "eco-bricks" which are plastic bottles stuffed with inorganic trash in the place of cinder blocks. Volunteers and the community comes together to help construct these sturdy buildings. Participants in this program will volunteer working side by side with the community to help construct these buildings while learning about Guatemalan culture and history. Participants will also enjoy making personal connections with those communities and individuals that they are working with.

UCCS Application and Information Link: <https://tinyurl.com/mpw5of4>

Priority Deposit Due: June 02, 2017

Deposit: \$150 to guarantee your spot

For questions, please contact Dr. Mandy Hansen at
mhansen2@uccs.edu | (719)255-7528 | www.uccs.edu/geo



UCCSEducationAbroad



UCCSAbroad

Certificate Approval Form

In order for a certificate program to be reviewed, please fill out the form below and submit to the appropriate college and campus committees. Please plan on at least six months after submission before offering a certificate. Complete information in Part I for all requests. Part II needs to be completed by those seeking approval for Gainful Employment (GE) certificates with financial aid eligibility for non-degree seeking students. All appropriate signatures should be obtained.

PART I

1. Name of Certificate: Master Literacy Teacher Certificate
2. Department(s): Teaching & Learning
3. College(s)/Institutions: College of Education
4. Faculty Director/Advisor: Monica Yoo
5. Type of Certificate:

- ☐ Gainful Employment
- ☒ Course of Study
- ☐ Professional Development
- ☐ Non-notated

6. Expected start date (semester and year): Fall 2017
7. Number of required credit hours: 15

8. Anticipated length of the program in semesters including summer (e.g., 2 years = 6 semesters):

4-5 semesters (4 if 2 classes are taken in summer)

9. Describe the certificate program. Include in your description the following information: (see attached)

- a. How the certificate program fits the unit's role and mission. If applicable, explain the specific roles of each institution if there are multiple institutions involved.
- b. Courses and requirements (e.g., minimum grades) to complete the certificate.
- c. Admission criteria (at a minimum must follow criteria delineated in policy but program may have higher standards)
- d. The exit process (include requirements for finishing, any forms that must be completed stating who completes these forms—student, faculty director, etc.; who will provide a list of completers to A&R so that a person's transcript may be changed).
- e. Costs of offering the certificate program.
- f. Expected benefits, income, return on investment.
- g. If applicable, describe any fees (e.g., program, course, application) that you will charge. (Note: You will need to follow campus procedures for fees.)
- h. If you are proposing a non-notated certificate, please explain why this is the best type of certificate and why you are not using a CoS or PD certificate. Please submit a plan for how you will inform students that the certificate will not be notated on official university transcripts.

Required Signatures

Additional names and signature lines may be added as necessary (e.g., center directors)

Requested by:

Monica Yoo Monica Yoo 3/17/17
Barbara Fyfe Barbara Fyfe 3/17/17
Faculty: Name Signature Date

Approvals:

Department Chair: Name

Leslie Gosh Leslie Gosh 3/17/17
Signature Date
Mark Miller, Dean for C&EC

College Dean: Name

Valerie Martin Conley Valerie Martin Conley 3-28-17
Signature Date

Campus Committee Chair: Name

Signature

Date

Graduate School Dean or Vice Provost of Academic Affairs

Campus Certificate Implementation
Committee Chair: Name

Signature

Date

Provost: Name

Signature

Date

To be completed by the Campus Certificate Implementation Committee:

CIP Code: _____ Plan Code: _____

Career Code: _____ Subplan Code: _____

Program Code: _____ Effective Date: _____

Date Assigned: _____

Meets all federal Gainful Employment Certificate Requirements?: Yes No
If no, what requirements are missing?

Master Literacy Teacher Certificate

Description of Certificate Program

- a. This certificate fits COE's mission to "prepare teachers, leaders, and counselors who embrace equity, inquiry, and innovation." These qualities are infused in all of our courses. Furthermore, it meets the COE goal to collaborate with campus and community partners to effect change. As part of our outreach, we will offer this program to cohorts in various districts. We have a commitment to begin a 17-student cohort in fall 2017.
- b. The courses are:
 - CURR 5414 -3 Literacy Assessment: Diagnosis and Evaluation
 - CURR 5415 -3 Foundations of Literacy: Theories & Models
 - CURR 5702 -3 Literacy for All Learners
 - CURR 5430 -3 Practicum/Reading Clinic Experience
 - CURR 5400 -3 Reading and Writing in the Content Areas

These courses are part of the Master's in Curriculum & Instruction: Literacy program. Students will be given the opportunity to apply to the MA program before completing the third course. It is hoped that this will increase our numbers in the MA. Right now our numbers are very low in the Literacy MA. With 17 students beginning this fall, it is expected that at least half will continue on to complete the MA degree.

Students must achieve a B- or better in all classes and maintain a 3.0 GPA.

- c. Admission Requirements
 - Complete the electronic online application
 - Submit one transcript from all institutions of higher education previously attended
 - Have a 2.75 grade point average
 - Minimum of two years teaching experience
 - Current résumé
- d. Exit Process
 - Monica Yoo will do a transcript review when a student has completed all coursework requirements and maintained a 3.0 GPA. She will send a list of certificate completers to the Registrar
- e. Cost of offering the Program
 - The courses in this certificate are part of the MA in Curriculum and Instruction: Literacy Program.
 - There will be no additional costs to the department or college as the courses will be part of faculty load.
- f. Expected benefits, income, return on investment

- The graduate enrollment for the MA in Curriculum and Instruction: Literacy Program should increase

g. Fees: Standard Fees will apply

UNIVERSITY OF COLORADO COLORADO SPRINGS
STANDARD FINANCIAL PROFORMA FOR TARGETED GROWTH OR NEW GENERAL FUND ACADEMIC PROGRAMS

ONE YEAR PILOT PROGRAM--NO BASE ALLOCATION

PROGRAM:	Year 0	Year 1	
Reading Teacher Certificate	2016-17	2017-2018	
ENROLLMENT AND REVENUE PROJECTIONS			
Graduate Student Resident Headcount		17	
Graduate Student Resident Credit Hours		15.0	
Graduate Student Resident rate per CH		\$ 505	
Graduate Student Non Res Headcount		0	
Graduate Student Non-Resident Credit Hours			
Graduate Student NResident Tuition Rate per CH			
Grand Total Student Headcount		17	
Revenue Projections			
Graduate Resident Tuition		\$ 128,746	
Graduate Non-Resident Tuition		\$ -	
PROGRAM TUITION REVENUE		\$ 128,746	
College of Education			One time Allocation
<i>Wages & Salaries</i>			
Tenured/Tenure Track			
Lecturers		\$ 5,000	FY 18
Faculty Administrator		\$ 3,000	FY 18
Faculty Overloads		\$ 15,000	FY 18
<i>Benefits at 18% Campus Rate for lecturer/Overloads</i>		\$ 4,140	FY 18
			FY 19
Other			
Other-Graduate Assistantships			
<i>Subtotal College Personnel Expenses</i>		\$ 27,140	
Operating Expenses			
<i>Supplies</i>		\$ 3,000	FY 19
Printing/Postage			
Telephones			
Marketing			
<i>Recruitment</i>		\$ 3,000	FY 19
<i>Future Initiatives</i>		\$ 12,000	FY 19
Library Materials		\$ 2,500	FY 19
<i>Institutional Aid Enter and Footnote</i>		\$ 37,796	FY 18
Subtotal Operating Expenses		\$ 58,296	
Personnel Expenses		\$ 27,140	
TOTAL ACADEMIC PROGRAM EXPENDITURES		\$ 85,436	
REVENUE		\$ 128,746	
REVENUE AFTER DIRECT EXPENDITURES	\$ -	\$ 43,310	
Indirect Exp (24%--classes taught off campus)	\$ -	\$ 30,899	
NET ACADEMIC PROGRAM EXPENDITURES		12,411	
Total Contribution to Campus	\$ -	\$ 12,411	
<i>udget increments only if College & LAS meet a rolling 3-YEAR average of overall fall enrollment targets set by campus in addition to this</i>			
<i>Annual Base Budget Increment</i>		\$ -	

Notes:

Year 1

PROGRAM PROPOSAL for NON-THESIS
MASTER OF SCIENCES, CHEMISTRY and BIOCHEMISTRY OPTIONS
A Program of the Department of Chemistry and Biochemistry, UCCS
College of Letters, Arts, and Sciences

Description of Program

1. Department Mission

The role of the MSc, Chemistry option and Biochemistry option is to fulfill the Mission of the Department of Chemistry and Biochemistry, as stated:

The mission of the Department of Chemistry and Biochemistry is to give students the modern, comprehensive, and rigorous chemical education required to live and thrive in this technological age. We strive to graduate students who are creative problem-solvers, skilled scientists, and scientifically literate world citizens, who make informed decisions about society. We strive to increase inclusion and participation in chemistry and biochemistry by welcoming students from diverse backgrounds. We serve undergraduate BA and BS chemistry and biochemistry majors, graduate students in the MSc in Chemistry and Biochemistry program, as well as students majoring in other liberal arts disciplines.

2. Program design and benefits to students

The MSc, non-thesis options are designed similarly to the MSc, Chemistry thesis option and Biochemistry thesis option. The proposed non-thesis options would, like the thesis options, require 30 credit hours at the graduate level (5000-level or higher). Unlike the thesis options, the non-thesis options require a literature-based research paper, but do not require laboratory research. The non-thesis options also have flexibility in allowing up to four courses to be taken in other departments or colleges.

3. Department organization

The sponsoring department is the Department of Chemistry and Biochemistry. The name of the department includes recognition that biochemistry has become a distinct and separate discipline. While it is based in chemistry, biochemistry course work, laboratory, and research methodologies are unique to that discipline. Many university and college campuses acknowledge the unique and complementary aspects of chemistry and biochemistry.

4. Rationale for the non-thesis options

The objective of these non-thesis MSc programs is to provide an alternate pathway for students to complete an MSc degree in chemistry or biochemistry that does not involve an in-depth research project and thesis. These degree options are intended for students whose personal interests or current work responsibilities lower the desirability of conducting the required research courses for the thesis-based MSc degrees. K-12 teachers, non-traditional students, and employees of local industry who want to earn an MSc degree for promotions or to meet eligibility requirements for teaching positions at community colleges may wish to pursue the degree options.

Non-thesis degree applicants may or may not hold a Bachelor's degree in chemistry or biochemistry, but they should hold a Bachelor's degree in a related natural science discipline. For example, a student pursuing an MSc degree in biochemistry may have majored in molecular biology or in a related biology sub-discipline. A student pursuing an MSc in chemistry, but who does not have a Bachelor's degree in chemistry, should have completed undergraduate courses in organic, physical, and analytical chemistry prior to applying for the MSc program.

Students should not apply to the MSc program if they do not intend to complete the program. Entering the program represents a commitment by the student to do everything possible to reach completion. Students who eventually wish to pursue a Ph.D. program in chemistry or biochemistry should opt instead to enroll in the thesis option programs.

As for the Biochemistry option specifically, the demand for biochemistry courses and undergraduate biochemistry research opportunities has driven the growth of the Department of Chemistry and Biochemistry. The department's response to that demand has resulted in the offering of additional biochemistry courses, some cross-listed at the graduate level, and the recent hiring of an additional full-time faculty member and another new faculty member to replace Dr. Braun-Sand, who resigned from her tenured post.

Since the start of the new undergraduate programs in biochemistry, the numbers of students choosing these majors has grown and at present, there are more undergraduate biochemistry majors (100+) in the department than there are chemistry majors (100) according to the UCCS IR office.

5. Improvements resulting from the new option designation

The crux of the argument for a non-thesis option as far as operation of the department is concerned is that there are limited research opportunities and space in the department. Each applicant in the thesis option must have a faculty sponsor and there are only so many such opportunities. Enrollments in graduate courses (5000 level) are usually in the single digits. Even with cross-listing at the 4000 level, total enrollments in the cross-listed courses can be increased by having some MSc students who are not required to perform research. We believe that the non-thesis plan will be a win-win situation for graduate students and the department by satisfying student demand and course enrollment issues at the same time.

6. Enrollment projections

Our predictions are guesses. Under the former MBS program, we had 2-3 students per year in the program, all of whom were non-thesis, as that program was not a thesis program. We anticipate three-four students to enroll in this program per year. We hope to attract more prospective students now that the biochemistry program has been added to our degree options.

7. Uniqueness of the non-thesis options

Other MSc programs in chemistry and biochemistry exist in Colorado: The MSc non-thesis chemistry and biochemistry programs at UCCS will not be unique in the state. For example, the CU Denver campus offers a "Plan II" Masters in Chemistry program requiring 30 credit hours of course work without research. Our non-thesis program would be comparable to theirs.

8. Program teaching goals

There are three main program teaching goals:

- Prepare students for a professional having a heavy emphasis on scientific knowledge. An MSc program can be a terminal degree program for those employed as teachers or other non-research careers.
- Provide students with a focused program in the sciences having fewer restrictive requirements as compared to more traditional programs. One or more pedagogical courses may be from disciplines other than chemistry/biochemistry.
- Prepare students through their reading, discussing and presenting the precise area of research and related subject matter covered by the student's research paper. Evidence of progress in

these areas is to be determined by successful presentation of the research paper and completion and acceptance of the paper by the advisor and Program Director.

9. Student learning outcomes

Upon completion of a non-thesis option MSc degree program, students will:

- Have a broad knowledge of the basic areas of chemistry and biochemistry, with specific sub-areas of concentration.
- Have an overall view of recent advances in chemistry and biochemistry.
- Have the ability to communicate science clearly in written and oral forms.
- Have the ability to comprehend, search, and use the scientific literature.
- Have had opportunities to work as a team to discuss and solve scientific problems.

10. Requirements

MSc non-thesis option students must meet the following departmental requirements:

- Admission to the MSc non-thesis program requires that the student has attained a Bachelor's degree in chemistry or biochemistry from an accredited college or university with an undergraduate GPA of 3.2 or higher.
 - For students who have completed at least 45 credits at UCCS by the time of graduation, the GRE is not required.
 - For students applying from other accredited institutions, the GRE is required with a combined score in the 50th percentile or higher.
- For students who have a Bachelor's degree in chemistry or biochemistry with a cumulative GPA below 3.2 or for students who lack the degree in chemistry or biochemistry (but still hold a Bachelor's degree in a related natural science discipline such as biology, physics, science education, etc.):
 - The GRE is required with a combined score in the 50th percentile or above.
 - Additionally, students must take a placement exam. Enrollment in certain undergraduate courses will be required to offset any deficiencies indicated by the placement exam. Remedial course requirements are more likely for students who received their undergraduate education in a natural science-related major and who do not have a Bachelor's degree in chemistry or biochemistry.
- In consultation with the MSc Director, an MSc advisor must be chosen prior to the end of the first semester in the program.
- An MSc course plan must be developed in consultation with the MSc advisor and approved by the MSc Director. This course plan must be completed by the end of the first semester in the program.
- Candidates must complete a minimum of 30 semester hours of graduate credit according to the following requirements:
 - At least 18 credit hours must come from 5000-level lecture courses in chemistry and biochemistry taken at UCCS.

- Up to 12 credit hours of 5000-level coursework may be taken in a related discipline (*e.g.*, biology, mathematics, physics or other) and be applied to the 30 credit hour minimum if approved by the student's MSc advisor and the MSc Director.
- To establish breadth in knowledge, the chemistry option candidate must complete at least one course in each of four (out of five) sub-disciplines of chemistry (analytical, biochemistry, inorganic, organic, physical). The biochemistry option candidate will pursue a program of courses consistent with the biochemistry curriculum, but will also have a breadth requirement approved by the MSc advisor and the MSc Director.
- Students must maintain a 3.00 grade point average in graduate coursework. A student whose GPA falls below 3.0 will be placed on academic probation. Two consecutive semesters of being on academic probation will result in dismissal from the program.
- In addition to 27 credit hours of course work, (of which a minimum of 15 credit hours must be in chemistry and biochemistry), completion of three credits of CHEM 7050, is to be done during the fall semester prior to the anticipated date of graduation. In order to complete CHEM 7050, candidates must:
 - Complete a research paper to be submitted to and accepted by the student's MSc advisor and the MSc Director.
 - Deliver a successful presentation in the chemistry or biochemistry capstone course on a topic other than the research paper topic.
 - Prepare and present a departmental seminar on the research paper.
- Credits for graduate research (CHEM 5904) and thesis (CHEM 7000) may not be counted towards the 30-hour minimum for the non-thesis MSc degree.

Further Stipulations

- The MSc non-thesis options are not designed as programs for traditional, full-time students working towards attaining research or technical positions in industry nor for students working toward a tenure-track faculty position in 4-year colleges and universities.
- Students pursuing this degree option are not eligible for assistantship support from the department. However, a semester or two of teaching assistantship (TA) support may be considered for those preparing for teaching positions in a community college and those who would benefit from the teaching experience provided by the TA position. This is contingent upon the availability of TA funds.
- Full-time graduate students already in the thesis-based MSc program in chemistry or biochemistry who wish to switch to the non-thesis track must seek formal approval from the MSc advisor, MSc Director, and Chair of the Department of Chemistry and Biochemistry. If approved, this will result in immediate loss of TA support. Credit for thesis research (CHEM 5904 and CHEM 7000) cannot be applied towards the 30 hour minimum for the non-thesis MSc degree.
- The non-thesis degree requires no laboratory research work. Students wanting laboratory research should choose the thesis plan.
- The curriculum for each student will be different. The course plan will be determined near the beginning of the program.

Program Details

A. Goals and assessment

1. Research paper and presentation: Papers must follow the American Chemical Society style guidelines. Papers are to be written with the advice of a faculty advisor.
2. Program assessment by a graduating student survey: Department exit surveys are to be completed by students about to graduate to assess their views of the education they received at UCCS and the value of the MSc degree to their careers.
3. Program Director's Semiannual Meeting with the Student: The student's program plan is to be reviewed each semester to keep abreast of student progress. The Program Director and each student are responsible for this. Problems, if any, are listed and addressed.
4. Graduate Alumni Survey: Through the use of the Graduate Alumni Survey conducted through the Alumni Office and the Office of Institutional Research, data will be used to track the graduates' abilities to effectively compete in the job market and gain entrance into professional and graduate schools and then on to a career after they have graduated from the MSc program.

B. Program plans

1. MSc and the normal timeline:

The Master of Sciences non-thesis Chemistry or Biochemistry option is expected to require 1 ½ to 2 years, but may require additional time for students to complete coursework and/or research paper. The degree must be completed within 6 years. Students are required to complete a minimum of 30 credit hours of 5000 level or higher course work.

2. BA/BS/MSc:

The Accelerated Bachelor's/Master's degree program offers highly-qualified UCCS chemistry and biochemistry majors the opportunity to pursue the Bachelor of Arts or Bachelor of Science (B.A. or B.S.) in chemistry or biochemistry and the Master of Sciences (MSc) in chemistry or biochemistry concurrently. The main benefit of the program is that it allows students to register for up to nine credit hours to be used for both the B.A./B.S. and MSc programs. The program is designed to be a five-year or five-year+ (less than six) program for currently enrolled as UCCS chemistry/biochemistry majors. The requirements for the Accelerated Program are equivalent to the aggregate of the B.A./B.S. and MSc non-thesis degrees, except that up to nine credits hours can be applied toward both the B.A./B.S. and MSc non-thesis requirements. Students admitted to the Accelerated Program will maintain their undergraduate standing, until they complete the B.A./B.S. requirements for graduation. A student will be eligible to continue the program upon meeting the following minimum standards and criteria: completion of the requirements for a B.A. or B.S. in chemistry/biochemistry and maintenance of a minimum cumulative overall GPA of 3.20.

- a. Students enrolled in the BA/BS/MSc must follow the same requirements as MSc students, with some modifications:
 - i. Up to 9 credit hours can be counted toward requirements for BA/BS and MSc program. In order for credit to be double-counted, the following conditions must be met:
 1. Dual credit courses are approved by the Graduate Director of Chemistry.
 2. Dual credit courses must be completed with a B+ or better.

3. Dual credit courses must be taken for graduate credit (5000 level).
4. Dual credit courses must be offered by the Department of Chemistry and Biochemistry at UCCS.
- ii. Students must select a faculty advisor during their senior year.
- iii. Upon formal acceptance into MSc program, students will be required to fulfill all Measures of Student Outcomes, as previously described.

3. Part-time students:

The above Programs Plans describe coursework for full-time graduate students. Part-time students are required to fulfill the same requirements with the following modifications:

- a. Part-time students must take a minimum of one graduate course per semester to maintain enrollment in the graduate program.
 - b. Students may take a leave of absence from the program, with approval of the Thesis Committee and Research Mentor. Student may return to program with approval of Thesis Committee and Research Mentor if the absence is less than one calendar year.
- ### 4. Transfer student requirements:
- a. Up to 12 hours of graduate coursework with a grade of "B" or better and earned at UCCS may be requested for transfer into the MSc program. These credit hours are computed into the student's graduate GPA.
 - b. Up to 9 hours of coursework with a grade of "B" or better and completed at an institution other than UCCS may be requested for transfer. This request may be submitted only after completion of 9 hours of coursework as a regular admission student into the MSc program. These credit hours are not computed into the student's graduate GPA
 - c. Courses applied to a graduate degree elsewhere or within the CU System may be transferred for MSc credit with permission of the chemistry and biochemistry faculty.

C. Course work

1. A goal of this program is to create a personalized Program Plan and coursework for each student based on:
 - a. Student needs based on academic weakness and gaps
 - b. Courses relevant to student goals
 - c. Courses of interest to the student
2. Students are required to complete a minimum of 30 course hours, but may be required to complete additional coursework based on deficiencies in academic background (i.e. undergraduate education of student is not equivalent to a BA/BS Biochemistry degree at UCCS).
3. Students are required to maintain a GPA ≥ 3.0 to maintain good standing in the program. Any courses in which the grade earned is less than GPA 3.0 must be retaken with a grade above 3.0, unless otherwise approved by the Program Director.

D. Chemistry/Biochemistry graduate course descriptions

CHEM 5011 – Instrumental Analysis: Emphasis is on instrumental methods of analysis, including spectral,

electroanalytical, and separations methods. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4001, CHEM 4002, and PES 1120 with grades of "C" or higher. Prer. or coreq., CHEM 4111, CHEM 5111, or CHEM 4701. Coreq., CHEM 4012. Meets with CHEM 4011.

CHEM 5101 – Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy: The application of thermodynamics to phase changes, chemical reactions, and electrochemical cells. The rates and mechanics of chemical reactions. Graduate students will read primary literature articles and prepare oral presentations or written projects. Meets with CHEM 4111. Prer., CHEM 3111 or CHEM 3211, PES 1120, PES 2160, and MATH 1360 with grades of "C" or higher.

CHEM 5111 – Physical Chemistry: Thermodynamics and Kinetics: The application of thermodynamics to phase changes, chemical reactions, and electrochemical cells. The rates and mechanics of chemical reactions. Graduate students will read primary literature articles and prepare oral presentations or written projects. Meets with CHEM 4111. Prer., CHEM 3111 or CHEM 3211, PES 1120, PES 2160, and MATH 1360 with grades of "C" or higher.

CHEM 5221 – Biochemistry I: Topics include amino acids and their properties, experimental biochemical techniques, the structure, function, and regulation of proteins and enzymes, enzyme mechanisms and kinetics, lipids, and energetics of biological processes. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 3111 or CHEM 3211 with a grade of "C" or higher. Meets with CHEM 4221.

CHEM 5222 – Biochemistry Laboratory: Designed to provide laboratory skills and techniques. Experiments are selected to demonstrate principles and applications of current techniques and the use of instrumentation. Spectrophotometry, enzymology, centrifugation, and electrophoresis are stressed. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4211, CHEM 4221, or CHEM 5221 with grades of "C" or higher. Meets with CHEM 4222.

CHEM 5231 – Biochemistry II: Topics include common themes in metabolism, signal transduction pathways, common metabolic pathways such as glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation, and fatty acid metabolism with a focus on enzymes, control of the pathways, and interconnections between pathways. Prer., CHEM 4221 or CHEM 5221 with a grade of "C" or higher. Meets with CHEM 4231.

CHEM 5232 – Advanced Techniques in Biochemistry: Students develop competence in critical advanced lab techniques, including plasmid construction, characterization, and isolation; protein expression and characterization; enzymes assays; and product isolation and characterization. Graduate students will read additional primary literature articles and they will identify a problem and design an experiment, using advanced biochemical techniques, to test their hypothesis. Prer., CHEM 4222 or CHEM 5222 with a grade of "C" or higher. Meets with CHEM 4232.

CHEM 5241 - Biochemistry of the Gene: Introduces nucleic acids and then focuses on genome structures in simple and complex organisms. Examines the role of chromosomal proteins, non-coding RNA, and chromatin architecture to build an understanding of how regulation of gene expression determines cell function. Graduate students will read additional primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4221 or CHEM 5221 with a grade of "C" or higher. Meets with CHEM 4241.

CHEM 5251 – Biochemistry of Membranes: Structure and Function: Builds on key topics introduced in CHEM 4221/4231 to provide current information on membrane structure and function, as well as

intracellular and intercellular communication. Emphasis is on the relationship of membrane structure and function to human health and development. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 4231 or CHEM 5231 with a grade of "C" or higher. Meets with CHEM 4251.

CHEM 5401 – Advanced Organic Chemistry: Synthesis: Survey of organic chemistry including mechanistic and synthetic organic chemistry. Prer., CHEM 3111 or CHEM 3211 with a grade of "C" or higher.

CHEM 5402 – Advanced Organic Chemistry: Mechanisms: Modern concepts of physical organic chemistry and their use in interpreting data in terms of mechanisms or organic reactions and reactivities of organic compounds. Prer., CHEM 3111 or CHEM 3211 and CHEM 4101 or CHEM 5101 with grades of "C" or higher.

CHEM 5421 – Chemistry of Heterocyclic Compounds: Chemistry of five- and six-membered heterocycles and fused heterocycles, including structure, preparation, reactions and applications in the pharmaceutical world and in biochemistry and medicine. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 3111 or CHEM 3211; and one of the following: CHEM 4001, CHEM 4211, CHEM 4221, or CHEM 5221, with grades of "C" or higher. Meets with CHEM 4421.

CHEM 5501 – Mass Spectrometry Instrumentation and Use: Theory and practice of mass spectrometry instrumentation with a focus on the history of the instrumentation, instrumentation components, ion formation and ionization sources, tandem mass spectrometry, quantitative data analysis, fragmentation and data interpretation, accelerator mass spectrometry, and new topics. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 3111 or CHEM 3211 with a grade of "C" or higher. Meets with CHEM 4501.

CHEM 5502 – Bioanalytical Techniques: This course will focus on the practical application of bioanalytical techniques for the detection and quantification of biomolecules in complex sample matrices. In this hybrid lab/lecture course, students will gain understanding of basic bioanalytical instrumentation, sample preparation and analysis techniques, and apply them in a variety of laboratory experiments. Graduate students will read primary literature articles and prepare oral presentations or written projects. Req., CHEM 4001, CHEM 4002, and either CHEM 4211 or CHEM 4221 with grades of "C" or higher. Meets with CHEM 4502.

CHEM 5511 - Forensic Chemistry: Introduction to the elements of clinical chemistry and forensic toxicology, concepts of pharmacokinetics and pharmacodynamics, and chemical reaction mechanisms associated with drug metabolism and effects on neurotransmission. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 3111 or CHEM 3211 with grades of "C" or higher. Meets with CHEM 4511.

CHEM 5521 – Environmental Chemistry: An in-depth survey of the macroscopic and microscopic principles of environmental chemistry processes in land, air, and water; energy and climate change; chemical equilibrium, kinetics, reduction-oxidation reactions, acid-base chemistry, and thermodynamics. A focus on current environmental problems, impact, and sustainability. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Sustainability. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 3111 or CHEM 3211 with grade of "C" or higher. Meets with CHEM 4521.

CHEM 5601 – Nanoscience and Nanotechnology: Crystalline structure formulation of two-, one-, and zero-dimensional materials and the presence of quantum mechanical wave functions in such periodic potentials. Time-dependent perturbation-theory formulation of absorbance and emission phenomena.

The application of band structure and spectroscopic properties to the design of modern devices, sensors, and imaging schemes. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4101 or PES 4250 with a grade of "C" or higher. Meets with CHEM 4601.

CHEM 5621 – Surface Chemistry: A study of the physical chemistry of surfaces and interfaces. Topics include interfacial tension, wetting, monolayers, adsorption, heterogeneous catalysis, surface diffusion, kinetics of phase transformations, electrocapillarity, and the characterization of solid surfaces. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4101 with a grade of "C" or higher. Meets with CHEM 4621.

CHEM 5711 – Bioinorganic Chemistry: Covers topics of interest in bioinorganic chemistry. Structures of metal active sites, mechanisms, and model complexes will be discussed. Relevant inorganic protein structures will be covered. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 3111 or CHEM 3211, and CHEM 4211 or CHEM 4221 with grades of "C" or higher. Meets with CHEM 4711.

CHEM 5721 – Biochemistry of Drugs: This course examines in detail the mechanisms of action and biochemical basis of both pharmaceutical and recreational drugs. The use of primary research literature is emphasized. Graduate students will be asked to read and present advances in relevant research areas. Req., CHEM 4211 or CHEM 4221 with a grade of "C" or higher. Meets with CHEM 4721.

CHEM 5801 – Molecular Photochemistry: Covers the fundamental processes associated with the interaction of light and molecules. Topics include absorption, emission, radiationless decay processes, energy transfer, and photochemistry. Experimental techniques and equipment will also be discussed. Graduate students will present a fifty-minute talk on an article from a photochemistry journal and a four-page (minimum) summary evaluation of that article. Prer., CHEM 4111 or CHEM 4701 with a grade of "C" or higher. Meets with CHEM 4801.

CHEM 5901 – Topics in Chemistry and Biochemistry: Examination of selected topics in chemistry and biochemistry in lecture, seminar, and/or laboratory format. Topic will change according to the interest of the instructor and students. Students may repeat course for credit when topic changes. Consult Schedule of Courses for topic. Graduate students will read primary literature articles and prepare oral presentations or written projects. Meets with CHEM 4901.

CHEM 5921 – Biochemistry of Human Health and Development: A capstone course focusing on developing oral and written communication skills, combined with in-depth discussions, related to a central, timely topic to deepen understanding of human biochemistry. Example topics include the biochemistry of various diseases, the biochemistry of behavior and mental illness, and the biochemistry of sleep. Graduate students will prepare additional oral presentations and written projects based on their graduate laboratory or literature research. Prer., CHEM 4231 or CHEM 5231 and CHEM 4241 or CHEM 5241 with grades of "C" or higher. Meets with CHEM 4921.

CHEM 7050 – Masters Projects: This course is designed to round out the non-thesis masters student experience. Requirements are: Completion of a research paper to be submitted to and accepted by the student's MSc advisor and the MSc Director; delivery of a successful presentation in the chemistry or biochemistry capstone course on a topic other than the research paper topic and preparation and presentation of a departmental seminar on the research paper.

E. Chemistry & Biochemistry faculty

Please refer to http://www.uccs.edu/chemistry/faculty_and_staff.html

F. Research paper and presentation

1. The research paper and goals should be created by the MSc advisor and student, with approval from the Program Director.
 - a. The research project must be appropriate for the selected MSc advisor.
 - b. The research paper must be of sufficient quality and quantity for an MSc degree.
 - c. The average length of papers is about 60-70 pages including references. Papers should be written in Times or Times New Roman font, 12 pitch, double spaced.
 - d. An outline of the paper should be submitted to the advisor at least two months prior to the planned completion date.
2. Research paper:
 - a. The paper must contain the following elements:
 - i. Title
 - ii. Table of Contents
 - iii. Introduction/background Chapter
 - iv. One chapter for each paper topic or sub-topic beginning with the significance of the chosen topic
 - v. Summary and Conclusion
 - vi. References must be properly cited and can be listed at either the end of each chapter or the end of the thesis.
 - b. Drafts:
 - i. Student is required to submit a minimum of one draft to Research Mentor a minimum of three weeks before the paper is to be presented.
 - ii. The final draft must be approved by the research paper advisor and by the Program Director at least three days prior to the presentation.
 - c. Presentation:
 - i. The student must coordinate with Advisor and Program Director to plan a time and date for the presentation.
 - ii. Student must submit PP slides representing a summary of the paper at least three days prior to the presentation.
3. Further details for completion
 - a. The deadline for filing to advance to degree candidacy is the end of the second week of the semester in which the MSc degree is to be awarded. The final hours needed to finish may be in progress the semester the intent to graduate is filed.
 - b. Completion the program assessment form is necessary prior to proceeding to the Final Report Form. The assessment form will also tell UCCS about your post-graduation plans (we have to know this for reporting purposes to the Institutional Research Office) and post-graduation address.

- c. Degree and Diploma Application: The MSc Director prepares this form for each student. Only the student signature is needed. This will be forwarded to campus offices to generate and mail the MSc diploma. The address on it must match the address on the Final Report Form.
- d. Final Report Form: Completed by the MSc Director. Once a student passes the exams, the MSc Director approves the scores and signs it. The Program Director will notify the student when it has been signed and mail it on the student's behalf to campus offices.



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Graduate School Teaching Assistantship Awards

The Graduate School has been allocated money for teaching assistant positions for AY2018. These are base funded and will be available in subsequent years unless budget cuts change the budget; however, for this first year of the program, TAs are assigned to a department on a yearly basis. The total amount of money available to graduate school is \$24,000.

These are teaching assistantships; students must be doing work to support our teaching efforts (you can structure to be reader, grader, lab instructor, teaching a course, etc.). Pay is hourly up to \$12,000 per AY. For students paying non-resident tuition (and were not eligible to apply for residency), there will also be a tuition grant provided to cover the difference between resident and nonresident tuition for up to \$4000 per semester.

To apply, submit a request to the graduate school by June 1, 2017 for a teaching assistantship position (do not need to specify the person now but you will need to be able to name the person by July 1 when I submit names to the graduate school) addressing the questions below.

1. What are you requesting? What will the TA(s) be doing?
2. Which semesters are you requesting a TA (circle all that apply):

Fall '17	Spring '18	Summer '18
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3. What is the expected average number of hours per week student will work (assume that a semester is 16 weeks and student will be paid hourly during that period?) Please indicate if work schedule will be different than what is assumed in previous sentence and how the work schedule will work.
4. TA must be paid hourly as student employee in Student Assistant VI category (currently pay is \$14.84 - \$18.00). What hourly salary are you requesting?
5. Are you expecting it to be the same the same student each semester or a different student? (Note: for financial aid we need to identify student employee for all semesters by July 2017)
6. Are you expecting to request a tuition grant for a non-resident student? Yes No Unsure
7. What is the benefit to the program? (Consider undergraduate program quality, graduate program growth, recruitment of high quality students, allow faculty to do other things, etc. This may be the distinguishing factor to determine awards.)

Stipulations

Criteria for student:

- Be a graduate student in a degree program
- Registered for 6 or more credits during semester that person is a TA.
- Not on probation or on provisional admission at time of employment
- International students are eligible

No more than one \$12,000 award will be given to a department (although that award may cover multiple classes and employ multiple students).

Students should work at least 10 hours per week (on average) and no more than 20 hours per week.

You may request for a part time student to be given an award but the award to the student will be cut in half. Please list this in your proposal.

Work must be related to assisting in courses and cannot be used for office or research support.

Degree Changes Processes, Procedures, Requirements

These are the processes and requirements for changing the type of degree (e.g., MSc to MS; PhD general to specialized area). To go into effect for a new academic year, all approvals should be obtained prior to the new catalog being closed. Students may not be admitted into the new degree program until all approvals are finalized.

If degree requirements change, then students admitted under the old degree can either complete the original degree or opt into the new degree program, but must then meet the new requirements.

○ ***Approvals and Notification Requirements***

- Program, unit, department processes followed and approval
- College process and approval
- Graduate Executive Committee (GEC) or Council of Undergraduate Education (CUE) approval
 - Submit a proposal to chair of GEC or CUE within necessary timelines
 - Chair will shepherd through rest of process if approved.
- Provost Approval
- Chancellor Approval
- Regent Approval
 - Submit to VP for Academic Affairs
 - VPAA will take through Regent processes
 - VPAA will notify CCHE
 - VPAA will notify UCCS (Provost, Chair of CUE/GEC)
- Chair of CUE/GEC will notify relevant campus units (e.g., department, college, registrar)

○ ***Requirements for a proposal requesting a change***

- Rationale for change in degree (CU System needs this in a couple of pages)
 - Type of change: degree name, CSIP code change (note: some CSIP changes at the doctoral level may require HLC review; see the UCCS Accreditation Liaison Officer for guidance)
 - Rationale
- State changes in program requirements (consider changes to admission standards, curriculum, thesis/dissertation or exam requirements, program expectations and learning outcomes, and other graduation requirements).
- Discuss the impact on students, community, etc. Consider impact on student demand, workforce demand, and transfer students as applicable.
- Discuss the new resources needed to implement change (if no new resources, explicitly state this).
- Discuss if this changes duplication with other Colorado Institutions.
- Discuss your transition plan for students who have already been admitted (whether or not students have started the program).
- Provide statistics on 5 year enrollment and degrees awarded for your current program.

○ ***Criteria for approval***

- Rationale that would indicate the change strengthens the degree
- Program would meet CDHE requirements
- Resources needed along with expected increase to revenue need to be at least neutral