



Graduate Executive Committee

April 10, 2015

Minutes

Attendees: Craig Elder, Amy Silva-Smith, Cathy Claiborne, Whitney Porter, Barbara Prinari, Karen Livesey, Julie Jardon, Rob Block, Al Schoffstall, Sonja Braun-Sand, Jarred Bultema, Don Klingner, Ron Koch, Michael Calvisi, Jose Mora, Emily Skop, Eddie Portillos, Sherry Morreale, Sarah Elsey, Kelli Klebe, KrisAnn McBroom

Business

- Chemistry- proposal of biochemistry option: Presented by Dr. Braun-Sand. The chemistry department would like to add a Biochemistry option to the MSc degree. It will be a very similar program to Chemistry, with a Biochemistry focus of course content. They want the Bachelor's to Master's admission option for this program as well. It will be a thesis only program. They will not require any additional resources to begin this program. They have the faculty needed already. The admissions requirements will differ from chemistry in the pre-req course requirements.
 - GEC voted to recommend the Biochemistry option
- Engineering PhD, MAE track program changes proposal: Presented by Dr. Calvisi. The MAE faculty would like to request to lower the total credit requirements of the MAE track in the Engineering PhD to 60. This will include 30 dissertation credits and 30 coursework credits. A student who has a Master's already will be required to take at least 9 credits at UCCS along with the 30 dissertation credits, and can transfer up to 21 credits from their Master's degree. Those entering without an MS will be required to earn a Master's along the way to earning their PhD.
 - GEC voted to recommend the changes to the MAE track in the Engineering PhD.
- Graduation Audit paperwork
 - Programs seem to like the electronic form. Students do not seem to be reading or understanding some parts of the form. The Graduate School will reexamine the form and edit as needed to continue to improve on clarity.
 - Common issues the Graduate School is seeing
 - Check number of credits matches or is at least the number written by dept on candidacy form (e.g., student only listed/highlighted 30 credits, but dept. wrote 33 required)
 - Check that they have taken or are enrolled in all required courses for program
 - Make sure student is not listing courses they cannot use toward degree(e.g., 2000 level courses)
 - Check for expired courses, older than 6 years

Announcements

Spring GEC Meeting (10:00-11:30) : May 8 (UC 124)

Commencement Friday, May 15, 2015 Broadmoor World Arena

- The College of Letters, Arts and Sciences **10:30 a.m.**

- Beth-El College of Nursing and Health Sciences, College of Business, School of Public Affairs, College of Education, College of Engineering and Applied Science **2:30 p.m.**

Open Scholarships:

- **UCCS Graduate Scholarship Fund:** Need based scholarship available to first generation, graduate students who have a 3.5 GPA or higher. Five \$2,000 scholarships will be given out. Deadline June 1, apply through student portal.
- **Graduate Out-of-State Scholarship:** For out of state first year students. Open to international students
 - LAS programs final nominations for student April 15th
 - Lists from programs due June 30th.
- **Graduate Opportunity Scholarship:** Due June 1st, students apply through their student portal

Doctoral Research Fellowship Awardees:

\$20,000 Awardees

Vira Kravets	Physics
Caitlin Tyrell	Psychology
Kelly O'Malley	Psychology

\$10,000 Awardees

Sara Goldman	Physics
Evangelos Economou	Physics
Thomas Amundson	MAE

\$5,000 Awardees

McKenna Lovejoy	ECE
Seyed Shahrouzi	ECE

Graduate Research Fellowships 2015-2015 Awardees:

Shoshana Shellans	Biology (MSc)
Katherine Wright	Geography (MA)
Holly Taylor	History (MA)
Megan Murphy	History (MA)
Melanie Pimentel	History (MA)
Tommy McDowell	Mathematics (MS)
Jason Nobles	Physics (MSc)
Alisa Bartel	Psychology (PhD)
Katherine Johanson	Psychology (MA)
Isaac Solano	Ed Leadership (PhD)
Terainer Brown	Ed Leadership (PhD)
Albert Rodriguez	ECE (PhD)
McKenna Lovejoy-Roberts	ECE (PhD)
Slade Rodrigues	MAE (BS/MS)

Samantha Tow	MAE (BS/MS)
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Graduate Opportunity Scholarship:

Terainer Brown	Ed Leadership (PhD)
Samantha Tow	MAE (BS/MS)

NEW PROGRAM OPTION PROPOSAL
MASTER OF SCIENCES, BIOCHEMISTRY OPTION
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, Biochemistry option is to further fulfill the Department of Chemistry and Biochemistry Mission, 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 program, as well as students majoring in other liberal arts disciplines.

2. Program design and benefits to students

The MSc., Biochemistry option is designed similarly to the MSc., Chemistry option. The MSc., Chemistry option currently serves both chemistry and biochemistry students. The proposed option would, like the chemistry option, require 30 credit hours at the graduate level (5000-level or higher). Fifteen credit hours consisting of graduate research (Chem 5904) and thesis (Chem 7000). Three of the remaining credits (e.g. one course of five pedagogical courses) may be taken from another department or UCCS college. A thesis defense is required of all graduate students.

The proposed option would benefit biochemistry students, by recognizing their major field of study as “Biochemistry”, a designation that would more aptly describe their academic focus, research projects, theses, and career aspirations.

3. Department organization

The sponsoring department is the Department of Chemistry and Biochemistry. The name of the department is recognition of the fact 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 biochemistry. Many university and college campuses acknowledge the unique aspects of chemistry and biochemistry.

4. Rationale for the biochemistry option

The demand for biochemistry courses and undergraduate biochemistry research opportunities

has driven the growth of the Department of Chemistry and Biochemistry, at the University of Colorado Colorado Springs. The University's and Chemistry & Biochemistry Department's response to that demand has resulted in the offering of additional biochemistry courses, the hiring of two, full-time biochemistry faculty members, one biochemistry instructor, and separate biochemistry undergraduate degrees being offered. In addition, the director of the Science Center, a PhD biochemist, contributes by teaching a biochemistry course each semester and also serves on graduate committees of students whose work is in the area of biochemistry or chemistry.

Since the start of the new undergraduate majors in biochemistry, the numbers of students choosing the majors have grown steadily and at present there are equal numbers of biochemistry and chemistry majors in the department (about a hundred in each). Judging from the present second-year class, that ratio will shift further, in favor of the biochemistry majors. The second-year class has about two-thirds biochemistry majors and one-third chemistry majors.

This trend is also reflected in the number of graduate students declaring a preference for a research adviser in biochemistry at UCCS. Currently, half of our MSc. students are focusing and undertaking research projects in biochemistry. This is important for the MSc. program because about 2/3 of our MSc. students, as well as BA/MSc and BS/MSc students in the pipeline are, in fact, UCCS students choosing to continue their advanced degrees studies here following their BA or BS work. Having their MSc. properly designated, as lying within the field of biochemistry, more aptly describes their program of study.

5. Improvements resulting from the new option designation

Development of a separate option in biochemistry will allow for the program to grow and to evolve with unique focal points, emphases and degree requirements from the current chemistry option. As a separate discipline, this is to be expected. At the present, however, the biochemistry emphasis lies within the umbrella of "Chemistry option" and students abide by all of the rules of that option.

Biochemistry is easily the most popular chemical field of study today. Due to the selectivity of biochemistry PhD programs, entry into these programs can be very difficult. Because the doctoral programs are selective, many aspiring students become discouraged. Having the opportunity to do master-level work provides the opportunity to improve their backgrounds, gain laboratory experience, and improve their chances of moving into a doctoral program.

6. Enrollment projections

Predicting numbers of MSc. students is difficult.

7. Uniqueness of the biochemistry option

Other MS biochemistry programs exist in Colorado. Campuses offering the degree are CU Boulder, CSU Fort Collins and CSU Pueblo. Additionally, other institutions in Colorado offer a MS Biochemistry degree, but at these institutions, the MS degree is either a practice degree for marginal PhD students or a terminal degree for those students deemed unqualified to proceed further.

The MSc. chemistry program at UCCS is unique in the state, because it is a thesis-only program and because there is no prescribed list of required courses. Each student's program plan is designed by consultation between the student and the program director, and changes to the plan are permissible. The student's options for study are many. They can include computational or analytical work, mechanism, genetic and enzymatic chemistry, in addition to various aspects of cellular biochemistry. Each student's plan is tailored to the student's background and interests, as opposed to rigid, prescribed requirements.

8. Program teaching goals

There are three main program teaching goals:

1. Prepare students for a career in biochemistry or a related field. Students would be prepared for biochemistry-related jobs or advanced education (usually a PhD program) in biochemistry or a related field. An MSc program can be a terminal degree program because research and a thesis defense are required. Often this foundation may serve as a basis for pursuing a PhD in biochemistry or a related field
2. Provide students with a focused program in the sciences with fewer restrictive requirements as compared to more traditional programs. One pedagogical course may be from a discipline other than chemistry/biochemistry.
3. Prepare students through their reading, discussing and presenting the precise area of research and related subject matter covered by the student's project. Evidence of progress in these areas is to be determined by successful completion of the thesis and acceptance of the thesis and defense by the faculty.

9. Student learning outcomes

Students shall demonstrate at the Master's level the:

1. knowledge of the theories and concepts in biochemistry and one other area of chemistry.
2. ability to apply the fundamentals of research methodology.
3. ability to communicate biochemical knowledge orally.
4. ability to communicate biochemical knowledge in writing.

5. completion of a thesis-driven biochemistry research project.

10. Measures of student outcomes

A. These measure overall student progress.

1. Thesis and Thesis Defense (Research Presentation). Completed thesis due to committee a minimum of 7-days before Thesis Defense. Public, oral Thesis Defense to be followed by a private Thesis Defense with Committee members and any other invited faculty. Thesis and Thesis Defense are evaluated by three faculty members of the Thesis Committee using the Thesis Evaluation Form, part 1. This form outlines specific criteria used for thesis skills assessment. Papers must follow American Psychological Association guidelines.
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. Research Project Reports to the Research Adviser. These brief research summaries written by students and submitted to the research adviser form the basis of an end of semester meeting between the student and adviser, resulting in a rating of the student's progress for each semester as either satisfactory or unsatisfactory. To be completed during every semester, unless the student will graduate in the following semester. Unsatisfactory progress reports will initiate a follow-up meeting to outline a remediation plan.
5. Annual Research Presentation: Public research presentation by the student detailing background information, research methods, research progress and conclusions. Presentation to be conducted annually (Spring or Summer for students entering program in Fall), with private meeting with Thesis committee following public presentation. To be completed annually, unless the student will graduate in the following semester. Unsatisfactory presentation will initiate a follow-up meeting to outline a remediation plan.
6. Annual Thesis Committee meeting: Private meeting between student and three faculty members of the Thesis Committee to formally assess and discuss student's performance

and achievements in the past year. Meeting conducted annually. Annual Presentation and Meeting Evaluation Form to be completed at conclusion of meeting.

7. 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 in Biochemistry option is expected to require a minimum of 18 months (three semesters), but may require additional time for students to complete research, coursework, or thesis. Degree must be completed within 6 years. Students are required to complete a minimum of 15 hours of advanced coursework, which must be taken at the 5000-level or above, in addition to 9 hours of Chemistry Research (CHEM 5904) and 6 hours of thesis (CHEM 7000) for a total of 30 credit hours.

- a. Upon enrollment in the MSc Biochemistry Program, student must select faculty for the Thesis Committee and be sponsored in the program by a research mentor. Program of study will be tailored to address student deficiencies, appropriate coursework toward student's research project(s), and student interests. Thesis Committee and Research mentor must approve of the initial student Program of Study and any changes to Program of Study.
- b. In addition to described coursework, students are required to actively participate in and complete laboratory research project(s). Thesis Committee and Research Mentor evaluate completion of research project(s) and appropriate Thesis Defense date based on Measures of Student Outcomes described previously.

2. BA/BS/MSc:

The Accelerated Bachelor's/Master's degree program in Chemistry offers highly-qualified UCCS 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 (M.Sc.) in 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 M.Sc. programs. The program is designed to be a five-year or five-year+ (less than six) program for currently

enrolled University of Colorado Colorado Springs (UCCS) biochemistry majors. The requirements for the Accelerated Program are equivalent to the aggregate of the B.A./B.S. and M.Sc. degrees, except that up to nine credits hours can be applied toward both the B.A./B.S. and M.Sc. requirements. Students admitted to the Accelerated Program will maintain their undergraduate standing, until the mid-program review, which will determine the student's eligibility to continue in the Accelerated Degree Program. The mid-program review will be conducted the semester in which the student will complete the B.A./B.S. requirements (120 credit hours). A student will be considered 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 biochemistry and maintenance of a minimum cumulative overall GPA of 3.00 and biochemistry major 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 Thesis Committee and Research Mentor a minimum of 18 months (three semesters) before Thesis defense. For normal, full-time students this will occur by or before the end of the 7th semester of study.
 - 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 fulltime 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 1-calendar year.

4. Transfer student requirements:

- a. Up to 12 hours of coursework with a grade of “B” or better and earned at UCCS may be requested for transfer into the M.Sc. 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 M.Sc. 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 M.Sc. credit with permission of the chemistry 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 research project(s)
 - c. Courses of interest to the student
2. Students are required to complete a minimum of 15 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 Thesis Committee and Research Mentor.
4. Graduate courses currently offered in the Department of Chemistry and Biochemistry:
 - a. CHEM 5221 – Biochemistry I
 - b. CHEM 5222 – Biochemistry Laboratory
 - c. CHEM 5231 – Biochemistry II
 - d. CHEM 5232 – Advanced Techniques in Biochemistry
 - e. CHEM 5241 - Biochemistry of the Gene
 - f. CHEM 5251 – Biochemistry of Membranes: Structure and Function
 - g. CHEM 5901 – Topics in Chemistry and Biochemistry
 - h. CHEM 5921 – Biochemistry of Human Health and Development
2. Students may elect to take relevant 5000-level or Chemistry coursework as appropriate.
3. Students may elect to take relevant 5000-level or above coursework offered by another department of college at UCCS, pending approval of Thesis Committee and Research Mentor, as appropriate for each student and research project.

D. Chemistry/Biochemistry course descriptions relevant to this proposal

1. 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 (formerly CHEM 3320, CHEM 3360) with a grade of “C” or higher. Meets with CHEM 4221.
2. 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 (formerly CHEM 4830), CHEM 4221 (formerly CHEM 4810), or CHEM 5221 (formerly CHEM 5810) with grades of “C” or higher. Meets with CHEM 4222.
3. 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 (formerly CHEM 4810/5810) with a grade of “C” or higher. Meets with CHEM 4231.
4. 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 (formerly CHEM 4860) or CHEM 5222 (formerly CHEM 5860) with a grade of “C” or higher. Meets with CHEM 4232.
5. 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 (formerly CHEM 4810/5810) with a grade of “C” or higher. Meets with CHEM 4241.
6. 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 (formerly CHEM 4820/5820) with a grade of “C” or higher. Meets with CHEM 4251.

7. 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.
8. 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 (formerly CHEM 4820, CHEM 5820) and CHEM 4241 or CHEM 5241 (formerly CHEM 4815, CHEM 5815) with grades of “C” or higher. Meets with CHEM 4921.

E. Biochemistry Faculty

1. Sonja Braun-Sand, Associate Professor
2. Jarred Bultema, Assistant Professor
3. Wendy Haggren, Senior Instructor
4. Jerry Phillips, Professor Attendant, Director of the Science Center

F. Research and thesis

1. Research project(s) and project goals should be created by the Research Mentor and student, with approval from the Thesis Committee.
 - a. Research project must be appropriate for the selected Research Mentor.
 - b. Research project work must be of sufficient quality and quantity for a MSc degree.
2. Benchmarks to track performance (meetings and oral reports)-elaboration.
3. Thesis process:
 - a. Thesis must contain the following elements:
 - i. Title

- ii. Table of Contents
 - iii. Introduction/background Chapter
 - iv. One chapter for each research project or sub-project
 - v. Conclusion Chapter
 - 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 two-weeks before Thesis is submitted to Thesis Committee
 - ii. Final draft must be approved by Research Mentor before submission to Thesis Committee
- c. Thesis Committee:
- i. Student must coordinate with Research Mentor and Thesis Committee to plan a time and date for Thesis Defense
 - ii. Student must submit a final draft of the Thesis to the Thesis Committee and Research Mentor at least 7-days before Thesis Defense.
 - iii. If required, student must coordinate with Research Mentor and Thesis Committee to make any changes to Thesis as directed by Research Mentor and Thesis Committee during this private Thesis Defense. Final Thesis must be approved by Research Mentor and Thesis Committee.

Proposal to the UCCS Graduate School:

Change in coursework requirements for the Ph.D. in Engineering – Concentration in Mechanical & Aerospace Engineering.

Current Policy:

The current course requirements for the Ph.D. degree in Engineering – Concentration in Mechanical and Aerospace Engineering (MAE) are summarized below. Students entering with a B.S. must complete all requirements for a M.S. in addition to the requirements below.

- **Complete 24 semester hours of course work** (at least 15 semester hours must be MAE courses and at most 9 may be independent study courses).
- Courses cross-listed at the 5000/6000 level are to be taken at the 6000 level.
- All course work must be numbered 5000 and above if MAE, or 500(0) and above if non-MAE.
- **A minimum of 30 semester hours of dissertation research is required.**
- **A maximum of 9 credits hours may be transferred to the Ph.D. program.** This limit includes courses taken at UCCS as a non-degree student and a minimum grade of B- must be attained.
- For students admitted provisionally, provisional requirements must be completed prior to beginning graduate course work.
- An overall graduate GPA of at least 3.0 is required in order to graduate.
- A minimum grade of B- is required in each course.
- The student must pass the Qualifying Examination, the Comprehensive Examination, and final Defense of the Dissertation.

New/Revised Policy:

The proposal below was created by the MAE Graduate Committee and discussed in a MAE faculty meeting on November 11, 2014. The proposal was unanimously approved by the MAE faculty.

“In compliance with the UCCS Graduate school policy, the MAE Ph.D. program requires 9 credits of coursework beyond a Master’s degree and 30 credits of dissertation research.

The doctoral student’s advisor may petition the graduate committee to accept an additional 3 credits from the M.S. degree towards the 9-credit requirement.

The student’s advisor or doctoral committee may add additional course requirements.

Admission to the Ph.D. degree program typically requires a M.S. in mechanical, aerospace or aeronautical engineering. Students with their B.S. or M.S. degree in a related discipline or provisionally admitted students may have additional course requirements as part of their admission.

Students admitted directly into the Ph.D. program with only a B.S. will be required to complete a UCCS MS degree, either by coursework or thesis option.”

MAE Ph.D. Course Credit Requirements Policy

11/11/2014

In compliance with the UCCS Graduate school policy, the MAE Ph.D. program requires 9 credits of coursework beyond a Master's degree and 30 credits of dissertation research.

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