



Graduate Executive Committee
February 12, 2021
Minutes

Attendees:

Voting Members: Jeremy Bono, Michael Corl, Steve Tragesser, Carole Traylor, Janel Owens, Kay Yoon, Jon Caudill, Brian McAllister, James Pearson, Brandon Vogt, Amanda Elder, Catherine Simmons, Jeff Ferguson, Kathrin Spendier, Jeff Montez de Oca, David Moon, Andrew Lac, TS Kalkur, Roger Martinez, Rory Lewis, Sylvia Mendez

Non-Voting Members: Kylie Rossman, Kristen Walcott, Kelli Klebe, Stephani Hosain, Wang Chai, David DuBois, Mary Rupp, Maria O'Connell, Sarah Elsey, Gurvirender Tejay, Kristina Ewald, Kevin Laudner, Janice Dowsett, Andrea Williams, Wendi Clouse, Jose Mora, Rosey Reidl-Smith, Sudhanshu Semwal, Jessica Kirby, Sandy Ho, Robert Block, David Fenell

- Removal of Comprehensive Exam as a degree requirement for the Communication MA program (proposal attached; Kay Yoon)
 - The GEC voted to recommend approval of removing the Comprehensive Exam from the Non-Thesis track of the Communication MA program (18 Yes, 0 No, 0 Abstain)
- Certificate in Software Engineering (proposal attached; Kristin Walcott)
 - The GEC voted to recommend approval of the certificate in Software Engineering (18 Yes, 0 No, 0 Abstain)
- Graduate Research Showcase – Do programs want a campus wide event hosted by the Graduate School virtually?
 - Overall, a lot of support to have this event virtually however still some unknowns about students participating. Vote was held. 16 in favor of the event, 2 not.
- Instructor Rank and changes to Graduate School policies
 - The CU System has added a 3rd rank to the instructor ranks (instructor, senior instructor, principal instructor; [APS 5060](#))
 - [Section C: Graduate Faculty 1: Types of Membership](#)
 - “Faculty in the Clinical or Research tracks or **Senior Instructors** who hold a doctorate degree and who regularly teach graduate courses or supervise graduate student research may be appointed as regular members for the duration of their appointment upon recommendation of the program director and approval of the graduate school dean.”
 - Overall, the GEC would like to see the policies change to include BOTH Senior and Principal instructors. Graduate school will bring forward new wording for GEC.
- Admission processes (automating decisions where appropriate)
 - Programs can work with admissions to establish very clear criteria that would allow the admission examiners to apply criteria about clear admits and denied applications. If programs want to do this, please reach out to Graduate School staff or admission examiner to start the conversation.
- Dean's Report
 - We have had multiple programs where undergraduate students are being advised about taking graduate courses while an undergraduate. Recall that students are only allowed to bring in 9 credit

hours total taken as an undergraduate, including courses taken as dual credit as an AMP student. Please inform faculty in your program about these limits.

- We will be eliminating the gradapp@uccs.edu email and use the gradinfo@uccs.edu email. Program websites will need to be updated:
 - if you refer to gradapp@uccs.edu for submission of transcripts, please change to ugapp@uccs.edu
 - if you refer to gradapp@uccs.edu for general information about application, please change to gradinfo@uccs.edu
- Graduate Student Survey: The survey to graduate students about their experience is live from Feb 23 – March 17. We will send an email that you can share with students, faculty, or staff in your unit.
- Course Forgiveness: The undergraduates may soon have a course forgiveness policy and they put more restrictions on their policy. They will also remove a forgiven course from GPA calculations. Are there restrictions we might want on a graduate school policy? There was not support for looking at additional restrictions but people thought it would be good if forgiven courses are not included in GPA calculation. Graduate dean will explore with registrar's office on how to do this.
- Admit Letter Language: Program acceptance letters to students you want to admit should be stating that the program is **recommending admission to the Graduate School** and once approved by the Graduate School students will receive their official admission letter.
- Faculty brought up having issues with PDF forms.
 - Graduate School working to update forms and provide clear instructions and guidance for signing and filling in PDF forms. We will explore if there are other alternatives to PDFs.
- Faculty requested that the Mentored Doctoral Fellowship be reviewed and consider limiting the number of awards any one program may receive. The Graduate School will follow up.

Informational:

- Graduate School is updating forms. Please ensure forms are being retrieved from <https://graduateschool.uccs.edu/faculty-and-staff/faculty-resources> as that page has the most current forms. Old forms still exist on servers so a search can bring up old forms.
 - [Course Validation Form changes are live](#)
 - [Leave of Absence Form changes are live](#)
- Communication MA taking their program fully online for the Fall 2021 semester (no on campus programs)
- Changes to MESE curriculum
 - Add CS5300 Advanced Software Engineering as a required course instead of a student selected required programming intensive course

Announcements:

- The Graduate School will be hosting a Spring Virtual Grad Fair on March 9th from 10am – 2pm via Handshake.
- Open online course on mental health available to anyone in the CU Community:
<https://www.colorado.edu/asmagazine/2021/01/19/psychologist-launches-talkmentalillness-course-masses>

- Similarly, UCCS GRITS program is providing resiliency training: <https://grit.uccs.edu/support-coach-training>
- Scholarships (see attached description of all scholarship opportunities)
 - Research Fellowship nominations **due Feb 24 by 5pm** (see attached nomination requirements and procedures)
 - Cesar Chavez Scholarship deadline is **Feb 23**
 - Tuition Matching Grant and Out-of-state recruitment—departments use to recruit and retain students Spring 2021 (due to graduate school in May)
 - Students apply for scholarships by March 1 (must be admitted to have access to apply)
- Graduation paperwork **due on Feb 12** to Graduate School
- Catalog closes April 2 (so March is last time to have things approved before catalog closes)

GEC Meetings for 2020-2021 all meetings are from 10:00-11:30

- Spring 2021 GEC Meetings via TEAMS
 - February 12, March 12, April 9, May 7 (A week early due to commencement)

Proposal for Graduate Executive Committee
January 28, 2021
Submitted by Kay Yoon, Director of Graduate Studies
Department of Communication

Removing Comprehensive Exam from the Degree Requirement in MA in Communication

The Graduate Faculty in the Department of Communication propose to remove comprehensive exam from the degree requirement for students on the non-thesis track in the MA program. Currently, students on the non-thesis track are required both a Capstone Project (embedded in a capstone course, COMM 6050) AND a Comprehensive Exam.

Rationale for Removal of Comprehensive Exam

1. Students' feedback over the years indicates that the two culminating experiences, the Capstone Project and Comprehensive exam, are redundant, often forcing students to compromise on the quality of one experience over the other.
2. Recent trends in the student population in the program have shown that most students are in the workforce full-time, seeking more hands-on learning opportunities that present professional application potential for their careers. Additionally, the MA program in Communication has recently been approved to transition into a fully online program, which is expected to attract and cater to prospective students in the current workforce who are interested in reimagining and retooling their knowledge, skills, and abilities. The Graduate Faculty in the program believe that the comprehensive exam does not enhance learning experiences for professionally oriented students and that the capstone project is a more critical vehicle through which students can translate and apply their knowledge to the real-life context they are professionally embedded in. Therefore, focusing the faculty resources and energy on guiding students' capstone projects will serve our students better in helping them achieve their goals.
3. The comprehensive exam has been used to assess the following Program Learning Outcome: Demonstrate knowledge of communication processes – Broad-based and advanced knowledge and understanding of communication processes and theories related to organizational communication, media studies, or the student's personal area of interest. This learning outcome can be assessed through capstone projects or other written or oral artifacts students produce while in the program, and the comprehensive exam is not a critical instrument for this assessment.

Implementation Plan

If approved, the comprehensive exam will be removed from the degree requirement for non-thesis track students, effective Fall 2021. The current students who have been admitted to the

program with the comprehensive exam requirement will be informed of this change and be given an option to take the exam if they choose to.

Changes to MA Program in Communication
January 28, 2021
Submitted by Kay Yoon

Upon the approval of Dean Vidler on January 21, 2021, MA program in Communication will transition to a fully online program, effective Fall 2021. The change occurs only for the instructional modality from in-seat to online. The curriculum, the degree completion requirements (except for comprehensive exam), and the application processes remain the same. The proposal for the removal of the comprehensive exam for non-thesis track students has been submitted for GEC's vote in the GEC meeting scheduled for February 12, 2021.

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: ___ Certificate in Software Engineering ___
2. Department(s): ___ Computer Science ___
3. College(s)/Institutions: ___ UCCS- College of Engineering and Applied Science ___
4. Faculty Director/Advisor: ___ Kristen Walcott ___
5. Type of Certificate:

☐ Gainful Employment

X Course of Study

☐ Professional Development

☐ Non-notated

6. Expected start date (semester and year): ___ Any ___
7. Number of required credit hours: ___ 15 ___
8. Anticipated length of the program in semesters including summer (e.g., 2 years = 6 semesters):
___ 2 years ___
9. Describe the certificate program. Include in your description the following information:

- 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.

This certificate program provides specialized knowledge and experience in selected areas of software development and maintenance. Emphasizing both technical and managerial aspects of building large, complex software-intensive systems, the program has two purposes: (1) it provides employees of local companies with an opportunity to enhance their software engineering skills and their chances for career advancement, and (2) it provides students currently enrolled in the Masters of Science in Computer Science (MSCS) with more in-depth knowledge in software engineering to enhance

- b. Courses and requirements (e.g., minimum grades) to complete the certificate.
The certificate requires 5 courses:

[CS-5300](#) Advanced Software Engineering

[CS-5310](#) Software Requirements

[CS-5320](#) Software Design

[CS-5340](#) Software Maintenance

[CS-5350](#) Software Project Management

Students must earn grades of B or better in all courses to be counted toward the certificate.

- c. Admission criteria (at a minimum must follow criteria delineated in policy but program may have higher standards)

Any person ***not currently enrolled*** in a master's program must have a BS in computer science, mathematics, electrical engineering or equivalent; an undergraduate GPA of 3.0; and knowledge of a modern programming language, data structures and algorithms. Apply by providing an official transcript to the Department of Computer Science for each institution attended, one letter of recommendation, and a one-page summary of work experience and career goals. Before enrolling for courses, students must apply to the University as a non-degree seeking student and pay the required application fee.

Any person ***currently enrolled*** in the MSCS or Master of Engineering degrees through the Computer Science Department at UCCS may apply by sending a letter to the Department of Computer Science requesting admission the Software Engineering Certificate Program.

Any person who has ***completed an MSCS degree*** at an accredited university may apply by sending a letter to the Department of Computer Science with appropriate graduate school transcripts. Before enrolling for courses, students must apply to **the University as a non-degree seeking student and pay the required application fee.**

- 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).

After satisfactory completion of all five courses, the student should notify the Department of Computer Science in writing, including a copy of their UCCS transcript. The Software Engineering Certificate will be provided within 30 days of notification. Courses taken under the Software Engineering Certificate program will appear on the student's official transcript. However, the Software Engineering Certificate itself will not be noted on the transcript.

- e. Costs of offering the certificate program.

No additional costs.

- f. Expected benefits, income, return on investment.

Enrollment increase in graduate level software engineering courses, potential funnel into MESE degree or other computer science masters programs.

- 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.)

Only standard fees apply.

- 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.

N/A

PART II (for GE Certificates) – Not Applicable

1. Program website URL for certificate program: https://eas.uccs.edu/cs/academics/certificates (to be updated with correct courses)_____
2. Provide a narrative description of how the institution determined the need for the program. Describe what need this program will address and how the institution became aware of that need. If the program will be offered in connection with, or in response to, an initiative by a governmental entity, provide details of that initiative.
3. Provide a narrative description of how the program was designed to meet local market needs, or for an online program, regional or national market needs. For example, indicate if Bureau of Labor Statistics data or state labor data systems information was used, and/or if state, regional, or local workforce agencies were consulted. Include how the course content, program length, academic level, admission requirements, and prerequisites were decided; including information received from potential employers about course content; and information regarding the target students and employers.
4. Provide a narrative description of any wage analysis the institution may have performed, including any consideration of Bureau of Labor Statistics wage data related to the new program.
5. Was the program reviewed and approved by any external groups such as:
 - ☒ Business advisory committee
 - ☐ Program integrity board
 - ☐ Oversight/regulatory agencies (other than CDHE or accrediting agencies)
 - ☐ Business that would likely employ graduates of the program
6. Provide a narrative description of how the program was reviewed or approved by, or developed in conjunction with, the entities selected in #5. For example, describe the steps taken to develop the program, identify when and with whom discussions were held, provide relevant details of any proposals or correspondence generated, and/or describe any process used to evaluate the program. The institution must retain, for review and submission to the appropriate federal agencies upon request, copies of meeting minutes, correspondence, proposals, or other documentation to support the development, review, and/or approval of the program.
7. Describe how you will determine the on-time completion rate, job placement rate, and median loan debt in order to disclose the information on the departmental website.
8. When do you intend to begin disbursing Title IV funds to students: _____
9. Estimate the cost of the program (you may change table as needed for your certificate and whether the program is online or in-person but make sure you include all information needed for GE designation):

Note that this is an existing certificate

	Per Term	Annual
Tuition and fees	Avg \$4742 (non-resident)	Avg \$9485 over 2 years (non-resident)

Certificate Approval Processes Approved **DATE**

Room and board	\$5000	\$10000
Books and supplies	\$400	\$800

Additional explanation of costs, if necessary (e.g., cost per credit hour):

10. Using the Standard Occupational Classifications: [http:// www.bls.gov/soc](http://www.bls.gov/soc)

a. Select the primary occupational group for which the Gainful Employment Program will train the student:

☐ NA _____

b. List all six-digit codes that reflect occupations in which the graduates of the proposed program will be trained for employment: ☐ NA _____

11. Have you read the Gainful Employment regulations posted at

<http://www.ifap.ed.gov/GainfulEmploymentInfo/index.html> and are you aware that failure to comply and failure to meet “gainfulness” could make your program ineligible for the Title IV financial aid on an annual basis? ☐ Yes ☐ No. ☐ NA


Have you reviewed the regulations for any further requirements in the application?

☐ **Yes** ☐ No

Required Signatures

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

Requested by:

Kristen Walcott		2/1/2021
Faculty: Name	Signature	Date

Approvals:

Jugal Kalita		
Department Chair: Name	Signature	Date

Donald Rabern	 <small>Donald A. Rabern (Feb 2, 2021 11:46 MST)</small>	
College Dean: Name	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
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Provost: Name	Signature	Date
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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?

Kristen R. Walcott
Program Director for the Masters of Engineering in Software Engineering
Associate Professor of Computer Science
University of Colorado at Colorado Springs
kjustice@uccs.edu

Proposal for modification of the MESE program description (from Dec 2014)

Requested change to MESE:

- 1) Add CS5300 Advanced Software Engineering as required course in the place of a required programming intensive course.

CS5300 is a new graduate course crosslisted with CS4300, Advanced Software Engineering. The course is coding intensive and includes a project in which the students work through the entire software development lifecycle with emphasis on new tools and technologies to assist in each lifecycle phase. Maintenance and Project management are also addressed.

This is a better match for the program than the generic “programming intensive course.”

Requested change to SE Certificate:

Add CS5300 Advanced Software Engineering as required course and remove requirement for additional programming intensive course.

This change is unlikely to have an impact of the CS5300 course size as most MESE and SE Certificate students would already be taking it as their programming intensive course. No extra resources are needed.

Additional Revisions:

The proposed modifications are incorporated into the documents below.

Thank you,
Kristen Walcott



UNIVERSITY OF COLORADO
AT COLORADO SPRINGS

College of Engineering and Applied Science Department of Computer Science

Guidelines for Master of Engineering in Software Engineering Last Updated: October 2012

Complex software-intensive systems are permeating every aspect of our lives. These systems are among the most complex products humankind has ever tackled. Software systems engineering is the disciplined application of proven principles, techniques, and tools to the creation and maintenance of cost-effective, user friendly software systems that solve real problems. To accommodate the demand for well educated software engineers in almost all industries today, the University of Colorado at Colorado Springs has established the Master of Engineering degree in Software Systems Engineering. The University of Colorado at Colorado Springs offers a unique environment to study, learn, and share experiences surrounding this special engineering discipline. Our faculty comes from a broad spectrum of backgrounds. Many have had years of experience in industry prior to joining the faculty. The result is a diverse melting pot of ideas, technologies, and experiences. Courses at the graduate level (and the undergraduate courses required for admission to the graduate program) are regularly offered in the late afternoon and evening to enable students from local industry to continue their studies.

I. Admission Requirements

1. A Bachelor of Science or a Bachelor of Arts degree in mathematics, computer science, engineering, information systems, or equivalent.
2. An overall undergraduate grade point average of 3.0 (on a scale of 4.0; awarded within the past five years) **or** minimum 148 GRE quantitative. Applicants with a grade point average of less than 3.0 or an undergraduate degree awarded greater than five years ago will be admitted on a case by case basis. Applicants with a grade point average between 2.75 and 3.0 awarded within the past five years may be admitted provisionally.
3. It is recommended the applicant have two years experience with commercial, industrial or Government software development or maintenance.
4. A concise statement of experience and career goals.
5. *Completed Admission Forms* include two copies of official transcripts and references from four people to be sent the address below.

Entering students must have the equivalent of the following UCCS courses

[CS 1150](#) Principles of Computer Science

[CS 1450](#) Data Structures and Algorithms

[Math 2150](#) Discrete Mathematics

[CS 3300](#) Software Engineering

Note: These courses may have prerequisites.

Note: Any comparable course from another approved university will suffice.

II. Degree Requirements - 30 credit hours total

Required Courses - 15 credit hours

[CS-5300](#) Advanced Software Engineering

[CS-5310](#) Software Requirements
[CS-5320](#) Software Design
[CS-5340](#) Software Maintenance
[CS-5350](#) Software Project Management

Degree Completion Courses - 15 credit hours

One of:

[CS 7000](#) Thesis (6 credits) plus three elective courses;
[CS 7010](#) Project (3 credits) plus four elective courses; OR
[Project Portfolio](#) (see description below) plus five elective courses

Project Portfolio

Portfolio Specification

This is a 5-10 page paper that describes at least one, and at most four, projects in which the student has been engaged. For each project it will describe the overall project objectives, the team, the students' role on the team, the formal software engineering/development methodology used, and the lifecycle stages in which the student was engaged. It should explicitly relate the project(s) to at least 2 of the MESE courses that the student has completed. It should also include examples - at least one example work artifact from the software engineering process, with the artifact(s) not counting toward the 5 page minimum length. The document should be a formal technical paper. It is recommended that students include appropriate references to relevant software engineering sources, such as books, papers and blogs.

Portfolio Timing

Students may submit their portfolio at any time after having completed 6 credits, and for work-related experience, it is strongly recommended it be submitted after completing 15-18 credits to allow the opportunity for taking one or more project intensive courses if the work experience is not deemed sufficient. In any case, the portfolio must be completed before the student can apply for graduation. If the proposal/experience is deemed insufficient experience, the student will be required to take a software engineering project intensive course and then resubmit. The program will ensure that a course designated as a software engineering project intensive course will be offered once per year, however a project intensive course may not be available every semester.

Portfolio Approval Process

The portfolio will be submitted to the MESE program adviser, in electronic form, with a copy to the department administrator. Review/analysis may take 2-4 weeks. If confidential information is included as part of the project, this can be presented in a full/revised state in a review meeting. Prepare a 15 minute presentation to discuss your portfolio. In your presentation, explain your project, your specific work in the project, and how your MESE education has or has not supported the process you've conducted, and explain all artifacts. The MESE program adviser can either approve it directly, or may call for a committee of relevant faculty. If minor revisions are requested, they may be resubmitted that term. If the portfolio is rejected or requires major revisions, the student will have to complete a project intensive course before resubmission and hence the portfolio may not be resubmitted until completion of said course.

Project

The second option for program completion is the Project, worth 3 semester credit hours. There are two project options:

- 1) The project option may involve a large programming or hardware development effort, which is usually done over one semester, and includes the requirements and certification specifications

and a user handbook. If the project will be completed with the assistance of others (in industry or through the College), meet with your Advisory Committee early to discuss your role in the project for approval.

- 2) Alternatively, the project option may involve producing a research paper, which is to be submitted for publication with the student and advisor as co-authors.

Given semester deadlines, it is highly recommended that you begin project work in the semester prior to project completion. Students intending to complete a project should be prepared to defend the project proposal very early in the semester of intended completion.

The format and content of the project report or paper are not controlled by University regulations but should follow the format of a thesis as described in the Thesis option. Students choosing the project option should develop a project proposal in conjunction with their major advisor that outlines the topics, scope, and objectives of the proposed project. The project topic will normally be in a common interest area to both the student and major advisor. The project proposal should be discussed with and approved by the student's MESE Advisory Committee before the student begins the work associated with the project. A signed copy of the proposal must be placed in the student's permanent file. The Computer Science Department should receive a copy of the project report for the departmental library. Additional copies are required for the project advisor and other members of the MESE Advisory Committee.

Thesis

Students who intend to write an MESE thesis should develop a thesis proposal in conjunction with their major advisor that outlines the topics, scope, and objectives of the proposed thesis. The thesis topic will normally be in a common interest area to both the student and the thesis advisor. The thesis proposal should be discussed with and approved by the student's MESE Advisory Committee before the student begins the research and writing of the thesis. A signed copy of the proposal must be placed in the student's permanent file.

The thesis should represent the best writing possible by the student and is not to be written or extensively edited by the student's major advisor. Original research work is praised though not necessary. Implementation and survey type theses are acceptable as is quality work related to the student's professional activities. However, the work must be accomplished while the student is enrolled in the master's program. The thesis is intended to furnish objective evidence of the student's ability to use independently and constructively the information, skills, and powers acquired in his/her graduate work. Students should begin writing their thesis early so there will be sufficient time for evaluation by the thesis advisor and rewriting by the student.

In mechanical features, all theses must comply with the specifications of the Graduate School. These specifications are contained in the document entitled "University of Colorado Graduate School Specifications for Preparation of Master's Theses and Doctoral Dissertations" which is available from the department. It is the student's responsibility to be familiar with this document so that a thesis acceptable to the Graduate School can be produced. This document specifies thesis form and standards, not technical content. Technical content is subject to the approval of the MESE Advisory Committee.

Two copies formally approved (signed) by two professors in computer science and including an approved abstract must be deposited with the UCCS Graduate School not less than two weeks before the end of the semester in which the degree is to be conferred. The Department of Computer Science requires one copy for the departmental library. Additional copies are required for the thesis advisor and other members of the MESE Advisory Committee.

Elective Courses

The electives may be any computer science course numbered 5020 or above. Up to two of the elective courses could be taken outside computer science if they are pre approved by the student's advisory committee.

Note: Some courses may have prerequisites that do not earn credit towards degree.

III. Degree Requirements

1. An overall 3.0 grade point average in all graduate work.
2. All work applied to the degree must be accomplished within a six year time limit.
3. Up to 9 hours of graduate work may be transferred from an accredited graduate program at another institution or taken as a non-degree seeking student at UCCS, provided:
 - a. course work has not been used for any other degree,
 - b. grade earned for the course(s) is B or better,
 - c. the course work has been taken within past six years,
 - d. the course coverage is equal in level, content, and depth to the course for which is it being substituted.
4. All courses included to count for this degree must be part of an approved plan of study. This plan must be developed by the student and approved by his/her advisor prior to completing 12 credit hours of graduate course work.

Advisory Committee

Each new student will initially interact with a computer science graduate advisor. This will usually be the Program Director of the Masters of Engineering in Software Engineering.

As early as possible in the MESE program, the student must select a computer science graduate faculty member to serve as academic advisory, research director, and chairman of the student's Advisory Committee. The formal acceptance and approval of advisor must be made prior to completion of the Plan of Study (must be submitted before completing 12 credits in the program). Prior to this, the MESE director will serve as advisor. In conjunction with this advisory, the student must invite at least two other graduate faculty members to serve as Advisory Committee members, with guidance from the chairman of the Advisory Committee. The Advisory Committee will provide any necessary direction to the student as well as be responsible for approving the Plan of Study and administering the final oral examination.

Plan of Study

The student, in consultation with his/her major advisor, must complete a Plan of Study consisting of at least 30 semester hours. **The Plan of Study must be submitted prior to the completion of 12 semester hours of graduate work.** This document specifies the courses and options chosen by the student and must be approved by the student's Advisory Committee and the MESE director. With Advisory Committee approval, the Plan of Study may be changed during the course of the student's graduate program.

Final Oral Examination

With either the Project or Thesis options, the student is required to pass an oral examination with the selected MESE advisory committee on work presented for the degree.

The final oral examination must be scheduled by the defense deadline issued by the UCCS Graduate School Office. If the student wrote a thesis, the examination will consist of a defense to the thesis and its foundations. If the student chooses to do a project (CS 7010), the examination will consist of a defense of the project and its foundations. It is the responsibility of the Advisory Committee to administer the examination and to report the results to the Graduate School. It is the responsibility of the student to circulate a copy of the thesis or project report to each member of the Advisory

Committee at least one week (preferably two weeks) in advance of the scheduled examination and to schedule the examination in concurrence with the Advisory Committee. This examination is open to the public.

If the student fails the final oral examination, the student may not attempt the examination again until at least three months have elapsed and until the student has covered such work as may be prescribed by the Advisory Committee. The student may retake the examination only once. If this examination is failed twice, the student will be terminated from the program.

A master's degree student must be enrolled during the semester they intend to graduate. If all of the course work, including thesis or project credits have been completed, and the student only needs to defend, the student should register for CS 9990, "Candidate for Degree".

IV. Further Information

For more information, call (719) 255-3544, visit our Web site at <http://eas.uccs.edu/cs/default.shtml>, e-mail csinfo@cs.uccs.edu or write:

University of Colorado
Computer Science Graduate Studies
1420 Austin Bluffs Parkway
Colorado Springs, Colorado 80918



UNIVERSITY OF COLORADO
AT COLORADO SPRINGS

University of Colorado at Colorado Springs
College of Engineering and Applied Science
Department of Computer Science

Guidelines for Software Engineering Certificate Program

This certificate program provides specialized knowledge and experience in selected areas of software development and maintenance. Emphasizing both technical and managerial aspects of building large, complex software-intensive systems, the program has two purposes: (1) it provides employees of local companies with an opportunity to enhance their software engineering skills and their chances for career advancement, and (2) it provides students currently enrolled in the Masters of Science in Computer Science (MSCS) with more in-depth knowledge in software engineering to enhance employability and career advancement.

I. Requirements for a Certificate in Software Engineering

The certificate requires 5 courses:

- [CS-5300](#) Advanced Software Engineering
- [CS-5310](#) Software Requirements
- [CS-5320](#) Software Design
- [CS-5340](#) Software Maintenance
- [CS-5350](#) Software Project Management

Students must earn grades of B or better in all courses to be counted toward the certificate.

II. Admission Requirements

Any person ***not currently enrolled*** in a master's program must have a BS in computer science, mathematics, electrical engineering or equivalent; an undergraduate GPA of 3.0; and knowledge of a modern programming language, data structures and algorithms. Apply by providing an official transcript to the Department of Computer Science for each institution attended, one letter of recommendation, and a one-page summary of work experience and career goals. Before enrolling for courses, students must apply to the University as a non-degree seeking student and pay the required application fee.

Any person ***currently enrolled*** in the MSCS or Master of Engineering degrees through the Computer Science Department at UCCS may apply by sending a letter to the Department of Computer Science requesting admission the Software Engineering Certificate Program.

Any person who has ***completed an MSCS degree*** at an accredited university may apply by sending a letter to the Department of Computer Science with appropriate graduate school transcripts. Before enrolling for courses, students must apply to **the University as a non-degree seeking student and pay the required application fee.**

III. Award of Certificate

After satisfactory completion of all five courses, the student should notify the Department of Computer Science in writing, including a copy of their UCCS transcript. The Software Engineering Certificate will be provided within 30 days of notification. Courses taken under the Software Engineering Certificate

program will appear on the student's official transcript. However, the Software Engineering Certificate itself will not be noted on the transcript.

IV. Time Limits for Completion of the Software Engineering Certificate

Students can usually complete the requirements for the Software Engineering Certificate in 1.5 to 2 years. Students have six years from the date of acceptance into the Software Engineering Certificate program to complete all five courses.

V. Further Information

For more information, call (719) 255-3544, visit our Web site at <http://eas.uccs.edu/cs>.

Department of Computer Science
University of Colorado
1420 Austin Bluffs Parkway
Colorado Springs, Colorado 80918

Software Engineering Certificate Courses

CS5300 Advanced Software Engineering.

Software methodologies and practices. A course project provides student teams practical application of software engineering techniques from conception thru planning, development, assessment/testing, deployment, and operations while experiencing the related challenges.

CS 5310 Software Requirements Analysis and Specification.

Techniques and tools for requirements analysis and requirements specification, requirements languages and notations, specification completeness and consistency. Team project in the analysis and specification of a major software system. Prer., Knowledge of modern programming language, data structures and algorithms and discrete structures.

CS 5320 Software Design.

Covers principles underlying a variety of methodologies and tools for design of sequential, parallel and distributed software systems, design language, graphical design representations, data abstraction, data dictionaries, data flow design and diagrams, object-oriented design, documentation. Team project in the design of a major software system. Prer. Knowledge of modern programming language, data structures and algorithms, discrete structures.

CS 5340 Software Maintenance.

Discussion and application of corrective, adaptive, perfective and preventive software maintenance techniques and tools. Related topics such as software systems analysis, reverse-engineering, re-engineering, regression testing and configuration

management are examined. Quality assurance topics will also be addressed. As a project, student teams learn about and maintain an existing software system. Prer. Knowledge of modern programming language, data structures and algorithms, discrete structures.

CS 5350 Software Project Management.

Planning, scheduling, costing of projects, measuring progress, predicting success, controlling failure, management tools and their use, effectiveness and efficiency of software engineering environments, distributed software development, quality control standards and practices. Prer. Knowledge of modern programming language, data structures and algorithms, discrete structures.

Graduate School Funding Opportunities

These are brief summaries of funding available from the graduate school. Please read specific details for each opportunity to understand application processes. [Information for students is on the graduate school webpage](#). You may share this document.

Graduate Research Fellowship (\$5,000/year; 10-15 given per year)

A competitive award sponsored by the Graduate School and Financial Aid given to outstanding students from any graduate program. Students must be engaged in research/scholarship with a faculty member. These can be for incoming graduate students or returning graduate students. International students are eligible. *Students are nominated by the program.* Nomination packets are **due February 24** to graduate school and awards made by March 20 for the following academic year. Awardees are part of the Graduate Research Academy and also receive a travel award.

Graduate Opportunity Scholarship (\$5,000-\$25,000/year; 1-6 given per year)

A competitive need-based scholarship given to incoming graduate students who bring diverse perspectives to UCCS. Students must have a minimum 3.0 undergraduate GPA and demonstrate financial need by completing the FAFSA no later than **March 1**. *Students apply directly through the UCCS scholarship webpage and must complete an essay as part of the application.* Students must have been admitted to the program to be able to access the UCCS Scholarship page (contact the Graduate School if there are issues). International students are not eligible. Awards will be announced in early April for the following academic year.

Graduate Out-of-State Scholarship (for recruitment of new students) (\$6,000/year; 20 given per year)

This is a merit-based scholarship for first year out-of-state graduate students. Students must be paying full nonresident tuition, have a minimum undergraduate GPA of 3.33, and be enrolled full time. International students are eligible. *These are recruitment scholarships and are given to programs directly to award to students.* Qualified students are considered by their program and there is no separate application process (except if department sets additional criteria or process). Colleges/departments/programs select and notify to students about awards as part of the recruitment/retention process. The program must inform the graduate school of their awardees by the **second Friday in May**. Funds not awarded return to the graduate school to be dispersed.

Graduate School Mentored Doctoral Fellowship (\$20,000-\$25,000/year awards; 4-5 given yearly)

A competitive award sponsored by the Graduate School that supports the professional development of doctoral students. Awards are for outstanding advanced doctoral students who are engaged in mentored professional development activities beyond coursework and dissertation research (e.g., additional research, teaching, clinic work; practicum, etc.). International students are eligible. *Students apply directly through the UCCS scholarship webpage.* Applications are due by **March 1** for awards in the following academic year.

Graduate School Tuition Matching Grant (up to \$8,000 per year; number depends on requests—approximately 50-100)

Program must provide matching funds (i.e., teaching assistantship, research assistantship, or funding for service/internship directly related to educational program). Colleges/departments/programs will be told how many awards they can give. Colleges/departments/programs select and notify to students about awards as part of the recruitment/retention process. The program must inform the graduate school of their awardees by the **first Monday in May**. Tuition matching grants are awarded through financial aid; departmental matching funds are paid through normal departmental processes. Students must have GPA of 3.0 or higher and be enrolled in 6 or more credit hours.

Research and Professional Development Award (previously Travel Award) (\$400/student; 40-50 given yearly)

These are allocated to help support research and professional development activities of graduate students. Such costs may include but are not limited to travel to professional conferences, registration for online conferences, research costs for materials or participants (but not personnel pay), publication costs. Only currently enrolled graduate students in degree seeking programs are eligible to apply. [Students submit application electronically, see graduate school website for deadlines and other information](#). **Award application opens twice a year.**

The Cesar E. Chavez Graduate Scholarship Competition is specifically designed to give graduate students the opportunity to submit critical scholarly work that focuses on a wide range of issues that pertain to equity, diversity, social justice, and human rights. We welcome graduate research papers and critical essays from all disciplines that shed new light on the topic(s) under consideration. We encourage, when possible, original work. The minimum award is \$500.00. The competition is open to all currently enrolled graduate students, except for previous Cesar Chavez winners. [For full details please see the website](#). All entries must be submitted by 12:00pm on Tuesday, 23 February 2021 and will only be accepted via email: graddocs@uccs.edu

Other awards offered through financial aid or units:

[Available institutional awards for graduate students can be found on the graduate school webpage](#)

Colorado Graduate Grant: need based, Colorado residents in STEM fields. Must complete FAFSA by March 1. Awards made by financial aid in Fall.

UCCS Tuition Grant: need based, Colorado residents in STEM fields. Must complete FAFSA by March 1. Awards made by financial aid in Fall.

[Lind Scholarship](#): need based; all US domestic graduate students eligible. Must complete FAFSA by March 1 and student completes and application with an essay through UCCS Scholarship application by March 1.

[UCCS Family Development Center Scholarship](#): Childcare scholarships may be available. Students can call (719) 255-3483 to learn more.

Scholarship portal opens December 1. Students must be admitted to review and apply for scholarships. Most institutional aid requires that students are admitted by March 1 or they cannot complete applications or money is gone by the time late admit students are admitted.

Updated January 7, 2022

The Graduate School *Graduate Research Fellowships* Nomination Process

NOMINATION DUE DATE: February 24, 2021 by 5:00 pm

Purpose: Approximately \$70,000 (depending on ICR distribution) annually is set aside for Graduate Research Fellowship awards. The fellowships are merit-based awards that contribute to educating graduate students and moving the university research mission forward. The awards are to be used to recruit and retain outstanding graduate students.

Requirements: Awards are conferred to incoming or returning graduate students with outstanding academic records. Priority is given to those graduate students who have identified a UCCS faculty mentor who will work with him/her on a research/creative product (e.g., thesis, publication, grant proposal, scholarly presentation, art showing, etc.). The student must be fully admitted to and active in (at time award is dispersed) an on-campus graduate program to be eligible for the fellowship. Awards are made for one year, and will be dispersed equally between fall and spring semesters. If the graduate student fails to meet the enrollment requirement, the fellowship is forfeited. Students who have received this award in the past are not eligible for an additional award.

Graduate Research Academy: The Research Office has created a Graduate Student Research Academy. Students who receive the Graduate Research Fellowship will be members of the Academy. Academy members will be eligible to receive a [\\$400 Research and Professional Development award](#) (students must request the funds). Academy members will receive invitations to other research events. A letter of academy membership will be given to students (who can list this on their vita). Events are optional opportunities for students to attend.

Awards: Each graduate research fellowship is a \$5,000 award. The number of awards will be based on the amount of money available each year in the Graduate Research Fellowship account. For the 2021-2022 year we currently expect to have \$80,000, allowing for 16 awards. Departments are limited to eight

(8) graduate student nominations. In order to make the distribution of funds equitable, any one department may receive up to 33% of money available in a given year (i.e., 5 awards in 2021-2022). This fellowship is an important recruitment tool and can especially help with nonresident tuition; please consider nominating your outstanding applicants.

Evaluation Criteria: Nominees will be evaluated by graduate faculty appointed by each college's dean (with appropriate representative across colleges and individual departments not having more than one representative). Evaluators will submit their ratings to the Graduate Dean who will make the final awards based on these ratings and limits on department awardees. All nominees will be evaluated on the following attributes (there is not a rubric):

1. Quality/Strength of past academic record/qualifications (e.g., GPA, senior thesis, publications, presentations, awards, grants, etc.). A student's particular achievements will be evaluated here based on their currently level/stage of their academic career (e.g., MA vs. PhD; new student vs. advanced student). Evaluators may also consider quality/strength of past programs when evaluating a student's record.
2. Quality/Strength of the student's statement, including an example of a specific research idea, graduate project, or creative work to be completed. May use a graduate school application statement, especially for new students, or have a student submit a document. This should not be a full research proposal.

3. Quality/Strength of letter of recommendation from UCCS faculty mentor, including clear evidence of commitment to have a research/creative interaction with the student related to the student's stated research idea, project, or creative work.
4. Quality/Strength of letter of recommendation from another faculty member and/or professional mentor who has knowledge of the student's previous experiences and future potential, including clear evidence of scholarly/professional accomplishments.
5. Quality/Strength of other factors that may influence success in graduate school.

Process: Graduate students do not “apply” for the fellowship like other financial aid or scholarships. Instead the program nominates a student following this process:

1. The nomination process is initiated by graduate director. Each department submits a nominating letter listing all applicants from the department, as well as a separate nomination packet for each student. Only one nominating letter per department needs to be sent. All materials should be sent electronically (paper files are not accepted).
2. Each individual student nomination packet should include **in the following order** (this order helps the reviewers easily look at the files):
 - a. Two letters of support:
 - i. One supporting letter from a UCCS faculty mentor is required. This letter should speak to the students' qualifications and should specifically outline how the faculty mentor will work with the student on a research/creative product. Please make sure that the undergraduate GPA and the undergraduate college/university is evident in this letter (or the UCCS Graduate GPA if the student is a returning UCCS graduate student).
 - ii. An additional supporting letter from another faculty member and/or professional mentor who has knowledge of the students' previous experiences and future potential is also required. A letter of recommendation submitted with the graduate students' initial application to graduate school may be used for new students or students who have been at UCCS for less than 2 years.
Note: No additional letters of support should be added.
 - b. A statement from the student nominee should briefly outline goals for graduate school. The student's statement may include a description of research interests/experiences, or an example of a specific research idea, graduate project, or creative work to be completed. This statement can be from the student's original application packet if your department requests such a document. This statement should be no longer than 500 words. This is not a complete proposal for a research project but rather is about a students' research goals while at UCCS.
 - c. Graduate Application form (not all supporting documents) plus a copy of unofficial transcripts or a transcript copied by the department (e.g., from grad application materials).
3. Nominations should be received in the Graduate School by **5:00 pm on February 24, 2021**.
4. The Graduate School will notify the students, departments, and the financial aid office about the award.
5. The funds are paid through financial aid to student's account. If a student has a balance the funds will be used to cover the balance.

Submission of Nominations: Deadlines will be strictly followed. An incomplete nomination or a nomination turned in later than the deadline will not be accepted. Please submit one PDF with the nominating letter and a single PDF with **all** materials for each individual student to the Graduate School (GradDocs@uccs.edu) **by 5:00 pm on February 24, 2021**. Please put materials in order listed above. The nomination file should be named with the student's last name and department in the file name (e.g., Jones-Business.pdf). Any questions related to the nomination and evaluation process should be directed to Kelli Klebe at GradDocs@uccs.edu.