

Colorado School of Mines – GRADUATE COUNCIL MEETING MINUTES
November 6, 2024, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 22 total (14 - majority needed for quorum). Quorum was present.

P	John Spear (Chair)	P	Danielle Ostendorf (LB)	P	Andy Osborne (NSE)	P	Uwe Greife (PH)
P	Ian Lange (EB)	p	Bettina Voelker (CH)		Jaeheon Lee (MN)	P	Pejman Tahmasebi (PE)
	Jeff Shragge (GP)	P	Ebru Bozdag (EDS)	P	Adrienne Marshall (HSE)	P	Jim Ranville (GC)
p	Mehmet Belviranli (CS)	P	Adrienne C. Kroepsch (HASS)	P	Ryan Venturelli (GE)		
	Lori Tunstall (CEE)	P	Nikki Farnsworth (CBE)	P	Kathleen Tomon (GSG)		
P	Rajivasanth Rajasegar	P	Yamuna Phal (EE)	P	Kip Findley (MME)		

Other Regular Attendees and Guests

P	Carl Frick (OGS)		Carolyn Freedman (OGS)	P	Jenny Briggs (OGS)		Roxane Aungst (OGS)
	Wendy Adams (HNRS)		D. Scott Heath (RO)	P	Paul Myskiw (RO)	P	Colin Schneider (RO)
P	Sam Spiegel (Mines Online)		Suzanne Beach (Payne)	P	Kristeen Serracino (AA)		Richard Krahenbuhl (GP)
p	Jon Johnson (Mines Online)		Peter Concepcion (Grad Admissions)		Luke Contreras (Grad Admissions)		Kelsie Diaz (CS)
P	Cadi Gillette (IGP)		Rachel McDonald (IGP)				

Special Guest(s): Erik Menke, Wendy Fisher, Iris Bahar, Alison Bodor

Welcome

John Spear

The Faculty Senate has drafted and submitted a letter to the Administration regarding proposed benefit changes, asking for a response. So far, only one response has been received. Faculty Senate is asking the Administration to work together to find solutions. If anyone wants to review the letter, please reach out to J. Spear (jspear@mines.edu).

For next semester, Graduate Council meetings will be moved to in-person meetings for the 1st and 3rd Wednesdays at 2:00 pm. Please look out for more details.

Briefings and Information Items

Office of Graduate Studies

Carl Frick

Fall 2025 Graduate Stipends

This year, the minimum graduate stipend is set at \$35,000. Next year, it will be set at \$38,000. This amount has been approved by the Provost. For the future, there will be an analysis to better understand where stipends are going. There has been a significant increase nationally.

- **Question:** J. Spear asked, does the minimum stipend also apply to TAs and RAs but with a shortened time for TAs?
- **Answer:** C. Frick answered yes.
- **Question:** K. Findley where did the number come from as it is higher than the national competitive fellowship? What does minimum mean?
- **Answer:** C. Frick answered that the amount was set based on the impression of what peers are doing and what was determined as a reasonable amount to live in the Golden area. However, it is a concern as a price differential may disincentivize students to apply for that graduate fellowship. The minimum means that departments cannot be below that minimum.



- **Question:** J. Spear added that if Mines Park housing is \$2,100 per month and taxes will be taken out of the \$38,000 stipend for graduate students, can students afford to live in Golden? Is \$38,000 too low?
- **Answer:** C. Frick an analysis will be done to have a better understanding of a more appropriate amount. In 2021, the minimum value was \$26,000. The Research Council brought up how can the grants keep up with the increasing amount.
- **Comment:** J. Ranville added the fellowships do not come with any kind of tuition compensation. Comparatively, Mines is compensating the students more than it would on a head-to-head stipend comparison.
- **Comment:** J. Briggs added the NSFGRFP fellowship does include tuition. It comes from a combination of NSF and OGS dollars, so the student receives full coverage for three years including tuition, fees, and insurance. The institutional commitment at all the universities that receive these is that the institution fills the gaps, not the student or the advisor.
- **Comment:** M. Belviranli added that in the past, the Graduate Council had approved the motion to increase the graduate stipend. Two years ago, the increase to \$38,000 was rejected because there was no plan for how it would affect future grants and how to stay competitive.
- **Comment:** J. Spear added that the previous Graduate Dean did the original study comparing it to the market analyses for different schools in Colorado and elsewhere. At that time, he proposed those changes which seemed reasonable from a graduate student perspective.
- **Comment:** T. Voelker added that this was discussed in Graduate Council and the Council approved the recommended amount.

Registrar's Office

Paul Myskiw

Please see email correspondence from the Registrar's Office and ITS regarding the new features in the student information system. Everything that faculty had access to is still available but has a new interface.

- **Question:** J. Spear asked how did the cloud migration go?
- **Answer:** P. Myskiw answered that the migration went well. Any issues experienced were minor and were able to be resolved quickly.
- **Question:** J. Briggs asked when looking up transcripts for graduate students, it is tricky to separate out graduate courses only if the student has taken undergraduate courses at Mines. Is this something that you are aware of? Do other faculty use this tool? Is it possible to return that functionality back to the updated system?
- **Answer:** P. Myskiw answered that the Registrar's Office will have to look into this. A better tool may be Degree Works which can be filtered by level.
- **Question:** K. Findley asked with GEODE going away for Spring registration, will students have any support if there any struggles?
- **Answer:** P. Myskiw answered on the student side, communication has gone out to students so that they are aware ahead of time. In the place of GEODE, there is a replacement degree planning tool within Banner. Implementation has begun but it will not be available until Summer/Fall registration. For Spring, there will be support available to students.



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L. Guido will be sending registration for GRADS judges via email. Additionally, the GSG/USG joint meeting is scheduled for this week. This meeting will be dedicated to drafting a letter to Administration regarding student representation in long-term planning for building and classrooms and the student health center. Currently, if a student is enrolled in less than 6 credit hours, they do not qualify for the student health center fee (no access to health services on campus including the dental clinic, student health center, and Counseling Center with no way to opt in).

- **Question:** J. Spear asked what is the perspective from GSG on the minimum graduate stipend? Are students able to survive on \$38,000 in Golden?
- **Answer:** K. Tomon answered that there are some students who can make a living in Golden, especially single students who are able to room with other people and split rent. There is also the option to walk to campus or take public transportation. However, this may be more difficult for students with families, especially international families, to make a living on \$38,000. In many cases, an international student's partner cannot work, so the student is having to support their whole family. Outside of those situations, it is still difficult for students to afford everything. This has been the biggest feedback received from students to GSG and is the top issue expressed in the Quality of Life survey (stipend is still too low for living expenses).

Continued Business

1.1

UCTE

Lori Tunstall

[CIM 9/18]

2 program changes:

MSPHD-UEEG: MS & PHD IN
UNDERGROUND CONSTRUCTION AND
TUNNELING ENGINEERING

Replace MNGN509 with CEEN532 in the required course list.

XCRTG-UCTE: GRADUATE CERTIFICATE
IN UNDERGROUND CONSTRUCTION AND
TUNNEL ENGINEERING

Replace MNGN509 with CEEN532 in the required course list.

The proposed program changes were approved by Graduate Council at the previous meeting. This was then presented to the Faculty Senate and was kicked back to Graduate Council to revise. The Senate felt that MNGN509 and CEEN532 should be cross-listed to provide more continuity for the graduate program and certificate program. If approved, the courses would be staggered offerings.

- **Question:** T. Voelker added that cross-listing usually refers to one class being taught under two different course numbers but that is not what is being presented? How are they courses currently configured – are they offered at different times?
- **Answer:** J. Spear answered the currently other course is offered one semester and the other is offered the other semester. The courses are equivalent. However, should these courses be replaced with “and/or” or should they be cross-listed? What is the best way to serve the highest number of students across two different departments? T. Voelker added, since the courses are equivalent, they should be cross-listed.

- **Question:** K. Findley asked what is preferred by UCTE and Mining?
- **Answer:** J. Spear answered that cross-listing is preferred from M. Mooney in UCTE and J. Rostami in Mining.
- **Comment:** P. Myskiw added that cross-listing allows students to take either course from either department to count towards their degree program. As long as both departments are okay with an instructor from either department teaching, then cross-listing is appropriate.
- **Question:** T. Voelker asked if cross-listed, students cannot take them both for credit?
- **Answer:** P. Myskiw answered that if a student takes one version, they could not take the other course for credit.

MOTION: The motion to approve the revised UCTE program changes was moved by K. Findley and seconded by R. Venturelli. The motion to approve the revised UCTE program changes was approved with 16 approved, 0 opposed, and 2 abstentions.

1.2

CS

Wendy Fisher/
Mehmet Belviranli

[CIM 10/9]

1 new program:

PROFESSIONAL MASTER'S DEGREE IN
COMPUTER SCIENCE

In Fall 2023, President Johnson and Provost Holz requested that the Computer Science department expedite the development of an online professional master's degree. This degree, along with its associated certificates and similar offerings from other departments—such as Electrical Engineering, Economics and Business, Mathematics, and Mechanical Engineering—aligns with Mines' core objective to increase the number of non-thesis master's students. Our goal is to enroll between 1,500 and 2,000 students across the online master's programs, with profits from these initiatives being reinvested into graduate programs across the institution.

The areas addressed by our online program are highly relevant to professionals in computing or a related field and various disciplines within the local and national industries. This professional master's degree is fully online, allowing students to earn three certificates as they advance through their coursework.

The primary target audience for this online program includes post-graduate professionals, particularly those pursuing a certificate or professional master's degree in computer science, such as recent graduates or mid-career professionals with academic backgrounds in computer science, data science, applied sciences, or related fields. While some students may choose to pursue a single certificate, we propose a flexible pathway for those interested in completing a full master's degree through a stacking model of certificates, complemented by an additional extra elective course. Our curriculum includes several courses focused on key areas such as machine learning, cybersecurity, business and product management, web applications, and software technologies. This program offers working professionals a valuable opportunity to deepen their knowledge in computer science while exploring a diverse range of sub-disciplines.



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The landscape of computer science (CS) in both industry and academia is rapidly evolving, with a growing demand for professionals who possess advanced technical skills and a deep understanding of computational methodologies. As technology continues to permeate every sector, from healthcare to finance, the need for highly qualified computer scientists has never been greater. However, for many working professionals, the pursuit of a traditional, on-campus master's degree is often impractical due to time constraints, geographical limitations, and financial considerations.

To address these challenges and make post-graduate education more accessible to a broader range of working professionals, we propose the launch of an online professional master's non-thesis program in computer science. This program is designed with flexibility and accessibility at its core, enabling students to balance their education with professional and personal commitments. By offering coursework entirely online, students from across the country—and even globally—can engage with the same high-quality education that the Colorado School of Mines is renowned for, without the need to relocate or put their careers on hold.

Students must have a base-level programming knowledge and the following prerequisite courses or equivalent knowledge:

- CSCI 200: Foundational Programming Concepts & Design
- CSCI 220: Data Structures & Algorithms
- CSCI 358: Discrete Mathematics

Additional training in Linux, GitHub, software engineering, and computer organization is highly recommended and can be acquired through online bootcamps, short courses, and similar programs.

If the applicant lacks this preparation, we recommend the student enroll in our CS@Mines Bridge program. Years of professional experience may be substituted for prerequisite courses.

This proposal has been revised with the following changes -- lowered the entry point for courses to make the program more marketable. CS is also working closely with the Library to find resources. Lastly, the stackable certificates had made the program inflexible. Although CS liked the modular approach, the program has been revised to include tracks: Applied Machine Learning, Business Economics, and Cybersecurity, to allow the breadth of knowledge but remain flexible.

- **Comment:** P. Myskiw added that the library has a source of funds for faculty to develop a low-to-no-cost textbook initiative. Please reach out to P. Myskiw to get connected with the librarian in charge of that committee.
<https://libguides.mines.edu/oer>
<https://libguides.mines.edu/oer/ztc>
- **Question:** J. Spear asked how many students do you plan to apply for this program?
- **Answer:** W. Fisher answered that the program projects 5-8 students for the first cohort starting in Fall 2025 with the intention of growth thereafter. CS is also looking to recruit from the Bridge program.

New Business

2.1

CCUS

Erik Menke

[CIM 10/22; Provost 10/22]

1 new program:

MASTERS IN CARBON CAPTURE,
UTILIZATION, AND STORAGE

The CCUS online MS program will expand offerings for professionals interested in either expanding their existing knowledge in carbon capture and storage or moving into the CCUS field. This aligns with the Mines@150 goals of expanding course offerings and diversifying course delivery, being innovative and entrepreneurial with resources, and potentially attracting private investment.

The course-based MS program will build on the current certificate program to provide students depth in three areas related to CCUS: 1) Technical skills and knowledge about CCUS, 2) Knowledge about the economic and policy aspects of CCUS, and 3) Knowledge about community outreach efforts aligned with CCUS. These foundational areas are designed to help working engineers move into CCUS-based careers.

[CIM 10/18; Provost 10/18]

1 new course:

CCUS585: CARBON CAPTURE,
UTILIZATION, AND STORAGE CAPSTONE

This is the proposed capstone course for the proposed CCUS coursework-based M.S.

This will be a course-based master's program completely online and asynchronous. Most of the courses are already in place as they build off the CCUS certificate that currently exists plus some additional elective courses and a capstone course. Some of the elective courses are not yet submitted in CIM because they include the new HES courses that are part of the HES certificate.

- **Question:** T. Voelker asked what has the enrollment been like in the certificate program?
- **Answer:** E. Menke answered that enrollment was been lower than anticipated but has been steady at approximately 10-15 students per year. However, after speaking with certificate students, the enrollment will be high in the first couple of years as many students have talked about returning to Mines for the master's program. Enrollment may dip in years 2 to 4 but is expected to increase.
- **Question:** R. Venturelli added that in the new program proposal, it states that 30 credits are required but only 27 credits are described in the program section. Could that be clarified? Also, CCUS585 has a pre-requisite of EBG523 but EBG523 is listed as an elective. If it is a prerequisite, should it be a required course for the master's program? Has CCUS598 been developed yet? Lastly, for CCUS520, will it still be offered once M. Prasad has retired?
- **Answer:** E. Menke answered that the program proposal will be edited as EBG523 should not be a prerequisite. CCUS598 has been developed and was offered for the first time this semester. It will get a permanent course number and will be run once a year. Moving forward, CCUS520 will be taught by the program director.
- **Question:** I. Lange asked some of the courses listed as electives are in-person courses but is the program online only?



- **Answer:** E. Menke answered that course lists will be updated to ensure they are offered online.
- **Question:** K. Findley asked, will the CCUS courses be accessible to students in other degree programs to take as an elective?
- **Answer:** E. Menke answered that other CCUS courses have students taking the course who are in not in the program so the same should apply to these courses as well.

2.2

CS

Mehmet Belviranli

[CIM 10/24]

1 course change:

DSCI570: INTRODUCTION TO MACHINE LEARNING

Adding pre-req per discussion with Doug Nychka, Zibo Wang, and Wendy Fisher.

[CIM 11/6]

1 new program:

PROFESSIONAL CERTIFICATE IN CYBERSECURITY

In response to the growing demand for advanced technical skills, the Computer Science department at Mines has developed this Professional Certificate in Cybersecurity. This certificate aligns with Mines' core objective of expanding post-graduate opportunities for professionals who need flexibility in their education. Designed to cater to recent graduates and mid-career individuals, this online certificate allows professionals to deepen their expertise in critical areas like cybersecurity, without interrupting their careers. By offering flexible, high-quality online education, Mines enables professionals across industries to gain practical, specialized skills in a format that fits their lives, while also supporting the institution's commitment to accessible, impactful graduate education.

CS has worked closely with Data Science to create an order of operation in the three main courses, so students take Data Science, Intro to Machine Learning, and then Advanced Machine Learning. This course change is adding DSCI503 as a prerequisite to DSCI570.

- **Question:** P. Myskiw asked, is this an advising prerequisite or something that will be enforced? In the past, graduate courses have not had prerequisites, but the Graduate Council can decide if this can be introduced and enforced.
- **Answer:** W. Fisher answered that CS would like this to be enforced, if possible, to ensure that students are building upon one another. Students have taken them in the opposite order, and it did not serve them well.
- **Comment:** P. Myskiw added that if the Council decides to enforce prerequisites on graduate courses, it will need to become part of the program and needs to be defined as such so that prerequisites are not hidden. This may change the total credit hours of programs (30 hours to 39 hours) if prerequisites are enforced.
- **Comment:** W. Fisher added that the catalog has numerous graduate-level courses with prerequisites. However, the prerequisites are undergraduate-level courses.
- **Comment:** K. Tomon added that from her experience taking DSCI570, it is a good idea to require DSCI503 as a prerequisite to prevent students from being lost at the beginning of the course. Having a recommendation sequence will be very helpful for graduate students.
- **Question:** J. Spear asked, can students from other programs take these class sequences?
- **Answer:** W. Fisher answered yes, any student can take these courses. These courses are part of



the Data Science master's program as well as several DS certificates and CS tracks at the undergraduate level.

The Cybersecurity certificate was accidentally removed when the CS post-baccalaureate program was deactivated. This will be re-submitted with the proposed changes and will be discussed at the next meeting.

Adjourn

John Spear

MOTION: The motion to adjourn the 11/6 Graduate Council meeting was moved by R. Venturelli and seconded by T. Voelker. The motion carried and the meeting adjourned at 5:00 pm.

Next meeting:

November 20, 4:00-5:00 pm via Zoom. Please send all agenda items to John Spear (jspear@mines.edu) or Kristeen Serracino (kristeen.serracino@mines.edu) 1 week in advance.

Consent Agenda The following proposals will not be discussed unless specifically requested by the Council. Please review the following items. With no objections, approval is implied, and items will be processed accordingly.

3.1 **Approval of Previous Minutes – October 16, 2024**

John Spear

3.2 **CS**
[CIM 10/24]

Mehmet Belviranli

1 course change:

DSCI575: ADVANCED MACHINE
LEARNING

Updated name to match name change of xListed version (CSCI575) and adding pre-req per discussions with Doug Nychka, Zibo Wang, and Wendy Fisher.