

Colorado School of Mines – GRADUATE COUNCIL MEETING MINUTES
November 20, 2024, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 22 total (12 - majority needed for quorum). Quorum was present.

	John Spear (Chair)	P	Danielle Ostendorf (LB)	P	Andy Osborne (NSE)	P	Uwe Greife (PH)
	Ian Lange (EB)	P	Bettina Voelker (CH)	p	Jaeheon Lee (MN)	P	Pejman Tahmasebi (PE)
P	Jeff Shragge (GP)	P	Ebru Bozdog (EDS)		Adrienne Marshall (HSE)		Jim Ranville (GC)
P	Mehmet Belviranli (CS)	P	Adrienne C. Kroepsch (HASS)		Ryan Venturelli (GE)		
P	Lori Tunstall (CEE)		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)
	Jon Johnson (Mines Online)	P	Peter Concepcion (Grad Admissions)		Luke Contreras (Grad Admissions)		Kelsie Diaz (CS)
	Cadi Gillette (IGP)		Rachel McDonald (IGP)				

Special Guest(s): Erik Menke, Wendy Fisher

Welcome

Tina Voelker for
John Spear

Briefings and Information Items

Office of Graduate Studies

Carl Frick

No updates at this time.

Registrar's Office

Paul Myskiw

Last week was priority registration. Things went well in the new Cloud version of the student information system. There were some Banner 8 functions that went away for faculty, so the Registrar's Office is working with the vendor to provide some new solutions. If any faculty members have additional questions about where things are in Banner, there is a webpage nestled under the Registrar's Office website that talks about the changes, or they can reach out to the Registrar's Office for guidance.

Graduate Student Government

Kathleen Tomon

K. Tomon reminded the Council that GRADS is scheduled for April 1st and 2nd. L. Guido will send out information on volunteering for judging via email. Industry partners or fellow colleagues who would like to judge are welcome to participate. The only stipulation is that judges must have a PhD.

- **Question:** T. Voelker asked what days will GRADS be held?
- **Answer:** K. Tomon answered GRADS will be held on Tuesday and Wednesday. There is a possibility that a third day will be added on Thursday, April 3rd. GSG will work around student schedules and will stick to strict timeframe.

Curriculum Item(s) for Council Vote

1.1 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.

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.

MOTION: The motion to approve the new Professional Master's Degree in Computer Science program was moved by L. Tunstall and seconded by M. Belviranli. The motion to approve the new Professional Master's Degree in Computer Science program was approved with 13 approved, 0 opposed, and 2 abstentions.

[CIM 11/6]

1 program change:

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.

MOTION: The motion to approve the new Professional Certificate in Cybersecurity program was moved by M. Belviranli and seconded by L. Tunstall. The motion to approve the new Professional Master's Degree in Computer Science program was approved with 13 approved, 0 opposed, and 1 abstention.

[CIM 10/24]

2 course changes:

DSCI570: INTRODUCTION TO MACHINE
LEARNING

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

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.



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MOTION: The motion to approve DSCI570 and DSCI575 was moved by M. Belviranli and seconded by K. Findley. The motion to approve DSCI570 and was approved with 13 approved, 0 opposed, and 1 abstention.

Continued 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.

- **Comment:** U. Greife added that when these were introduced during the previous meeting, there was discussion about the future of these degrees, of the research in this area, and if things would be built. Is there an update on this?
- **Comment:** E. Menke added there was some discussion during the last meeting. There is no concern with the successful of the program but rather with the new, upcoming administration that may not be as supportive as the current administration. However, this should not negatively impact the program. Talking with other faculty, there seems to be overall support for this kind of program and people in the industry have shared that there is valuable need for a program like this.
- **Question:** T. Voelker asked is there an enrollment goal for this program? What will happen if the program does not reach that goal?
- **Answer:** E. Menke answered for long-term steady state, the program is hoping for 30 students per year. If this goal is not reached, the program would be sunset by not admitting new students and only teaching the online courses until the students enrolled are able to finish the program.
- **Question:** T. Voelker asked how many students are currently enrolled in the certificate program?
- **Answer:** E. Menke answered enrollment for the certificate program is generally between 15-20 students per year. The courses also have some students who are not in program which bumps it



up to 20-25 students per year.

Additional Discussion

T. Voelker encouraged the Council to forward any comments and/or questions about the CCUS program to E. Menke before the next meeting so that these can be voted on. T. Voelker also reminded the Council that curriculum deadlines are coming up. The deadline to introduce a new program for the Fall 2025 catalog is November 27th. The deadline to change a program is January 8th and the deadline to introduce a new course or change a course is January 29th.

Adjourn

Tina Voelker for
John Spear

Next meeting:

December 4, 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** – November 6, 2024

Tina Voelker for
John Spear