

Colorado School of Mines – GRADUATE COUNCIL MEETING MINUTES
September 21, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 23 total (12 - majority needed for quorum). Quorum was present

P	Bettina Voelker (Chair)	P	Christine Baker (LB)	P	Andy Osborne (NSE)	P	Owen Hildreth (ME)
P	Eric Anderson (HSE)	P	Soutir Bandyopadhyay (AMS)	P	Jamal Rostami (MN)	P	Michael Heeley (EB)
A	Ebru Bozdag (GP)	P	Juan Lucena (EDS)	A	Jim Ranville (GC)	P	Luis Zerpa (PE)
P	Kester Clarke (MME)	P	Uwe Greife (PH)	P	Danica Roth (GE)	P	Bo Wu (CS)
P	Jay Straker (HASS)	P	Dave Marr (CBE)	P	Liam Witteman (GSG)	P	Lori Tunstall (CEE)
P	Christine Morrison (CH)	A	Salman Mohaghegi (EE)	P	Gabriel Walton (UCTE)		

Other Regular Attendees and Guests

A	Tim Barbari (OGS)	P	Carolyn Freedman (OGS)	A	Jane Ko (AA)	P	Mara Green (AA)
A	Wendy Adams (HNRS)	A	Denise Winn-Bower (PE)	A	Paul Myskiw (RO)	A	Roxane Aungst (OGS)
P	Sam Spiegel (Mines Online)	P	Angela Dunn (Mines Online)				

Special Guest(s): Şebnem Düzgün (MN)

Welcome

Tina Voelker

Briefings and Information Items

Office of Graduate Studies

Tim Barbari

No updates from the Office of Graduate Studies.

Registrar's Office

Paul Myskiw

No updates from the Registrar's Office.

Graduate Student Government

Liam Witteman

No updates from Graduate Student Government.

New Business

1.1

CHEMISTRY

Christine Morrison

[CIM 9/14]

1 program change: MPMSPHD-CH: MP, MS & PhD – Chemistry

Added flexibility to the non-thesis masters program so that students can choose 3 of 4 core courses rather than needing all 4 core courses.

There are four core courses in the department, department voted at the end of the 2021-2022 academic year to allow non-thesis masters to select three of the four core courses. The change does not affect the number of credits required for the degree; the change provides students' flexibility in the courses they'd like to take.

MOTION: To suspend the two-meeting presentation rule to approve the program change in Chemistry to the MPMSPHD-CH: MP, MS, & PhD – Chemistry by Rostami, seconded by Hildreth. Motion passed unanimously.

1.2

MINING ENGINEERING

Şebnem Düzgün

[CIM 9/7; Provost 9/7]

2 new courses: MNGN502: GEOSPATIAL BIG DATA ANALYTICS

Expand offerings and diversify delivery: The course provides a solid background for geostatial big data analytics, which is essential for resources engineering. Students will work with real world problems to implement geospatial big data analytics methods. Although there are various data analytics courses at Mines, geospatial data analytics and its big data aspects in resources engineering are not sufficiently covered in the existing courses. Hence this course will provide experiential learning and technical competency on geospatial big data analytics to not only MN students but all students across Mines. It is interdisciplinary and provides technical competency. Experiential learning and technical competency are the critical pillars of student signature experiences. The course will develop student signature experience at graduate level and fully aligned with Mines@150 mission

The course not only serves for MN graduate program but also the GIS and Geoinformatics interdisciplinary program and CEE's The Environmental modeling graduate Certificate, which are all online programs.

Course is focusing on geospatial data.

Comment on similarity between AMS course on spatial statistics, MATH432/532. Düzgün noted MNGN502 would focus on three types of data: discrete data sets, continuous data sets, and aggregate data sets. An additional data type, flow-type data sets such as Newtonian models, would be included as well. The course would not focus on the mathematical modeling but the application of it. The problems are introduced and students work six weeks on the problems defined in their domains. Düzgün provided examples of landslide prediction models, waste generation potential models, and depending on student interest: prediction models of various geohazards.

1.2.1

MNGN566: INNOVATE X

Expand offerings and diversify delivery: Innov8x fills an entrepreneurship and innovation gap in our curricula in the area of problem definition: the investigation and framing of a wicked problem in the context of ambiguity, uncertainty, and complexity and hands-on, and the iterative process of solving problems creatively. The course provides professionally oriented pre- and post-graduate education options and is already attracting new students to Mines. Innov8x significantly expands students' opportunities to connect with potential employers and alumni mentors. It has been piloted using face-to-face, remote, and hybrid modalities expanding our delivery capabilities. Moreover, Innov8x provides critical programming to bring to life our planned Labriola InnoHub and the Beck Venture Center and launch them as vibrant entrepreneurship and innovation anchors within the Mines community.

Be more innovative and entrepreneurial: Innov8x offers a distinctive student learning experience at Mines and abroad. The course has been singled out for recognition by the Dept. of Defense's National Security Innovation Network across 55 universities and by the Dept. of Homeland Security (DHS) (<https://bit.ly/3oRv7he>). The course served as DHS's first nation-wide pilot for innovating homeland security. It continues to provide rich ongoing opportunities for alumni engagement and industry/government outreach with minimal use of available resources. The course will cover various sociotechnical problems from resources engineering as well as mineral supply chains

Provide detail about how the course will be delivered: Residential (less than 50% of

course delivered online) or Online. If it is not offered online, explain why. Innov8x is versatile. It is offered as a residential face-to-face course. It is also offered online for remote students who have participated successfully. Due to Covid-19 restrictions, some face-to-face students have participated using a hybrid modality.

Course is in the same format as the other Innov8x courses available on campus, but will focus on problems in the mining industry and other resource industries.

- **Question** on offering the course within Mining when an EBGN course of the same name is available and if the offering times are different; Düzgün reported the course as the same with more focus on problems within the geosciences.

The first weeks provide instruction on innovation and entrepreneurship; sponsors from different industries provide industry-specific problems. Students prefer to take the courses within the Mining course listing; MNGN number could be used for electives. Councilor noted it may be more optimal to have a single home for the course. Teaching credit for developing and teaching the course had not been provided.

- **Question** on how different problems would be discussed in the cross-listed course; course sponsors from the mining and geosciences industries provide specific problems, students would work with Düzgün on these problem sets.

There is an undergraduate version of Innov8x in EBGN cross-listed with the graduate course; graduate and undergraduate meet together.

Councilor noted if the course could benefit students across Mines a more generic number could be used to institutionalize the course; suggestion for different sections for different groups.

1.3 **ECONOMICS AND BUSINESS**

Michael Heeley

[CIM 9/15]

2 course changes: EBGN578: BUSINESS OPERATIONS AND SUPPLY CHAIN MANAGEMENT

We have changed the supply chain course (EBGN559) to just focusing on supply analytics and wanted to include the management side of supply chain in the business operations class.

Supply chain management course had been changed to supply chain analytics. Course instructor wished to include supply chain management as a business operation. The course change includes a title change from “Business Operations and Venture Planning” to “Business Operations and Supply Chain Management”; additional updates to course description to include details of course content and supply chain management. Minor update to the student learning outcomes to remove business and/or operations plan from the Final Project.

EBGN566: TECHNOLOGY ENTREPRENEURSHIP

Updating the course description in the course catalog to more accurately reflect what is currently being taught.

Has been offered for a long time within the ETM program. Course description was updated to better

reflect the details of the course content and what is currently being taught.

Comment made on the use of 2.5 lecture contact hours on a three-credit course; course updated to reflect three lecture contact hours.

Continuing Business – from 9/7/22

2.1 **Committee Form Alignment**

Tina Voelker

Comment made on language providing flexibility for the thesis committee chairperson being outside of Mines; Councilor suggested the chairperson remain specific to Mines and reflect this in the Catalog language.

2.2 **MINING ENGINEERING**

Jamal Rostami

[CIM 8/24, Provost 8/24]

6 new courses:

MNGN581A: FUNDAMENTALS OF TAILINGS ENGINEERING I: INTRODUCTION

MNGN581B: FUNDAMENTALS OF TAILINGS ENGINEERING I: TSF PLANNING AND SITING

MNGN581C: FUNDAMENTALS OF TAILINGS ENGINEERING I: TAILINGS GEOTECHNICS

MNGN582A: FUNDAMENTALS OF TAILINGS ENGINEERING II: TSF WATER MANAGEMENT

MNGN582B: FUNDAMENTALS OF TAILINGS ENGINEERING II: TSF OPERATIONS AND GOVERNANCE

MNGN582C: FUNDAMENTALS OF TAILINGS ENGINEERING II: TSF CLOSURE AND RECLAMATION

Rostami reported Nelson willing to work with Registrar's Office on parts of term. Spiegel noted the length of the courses is not an issue but the start date of the courses. Three courses offered within a sixteen-week span would not work due to the start dates. A new start date would cause a burden on the system regarding financial aid, admissions, and administrative duties.

Nelson willing to repackage the course and its offering sequence.

The Tailings Center offered a series of short courses; the courses would need to be modulated and assessed to provide credit or a certificate for students. Smaller, modulated sections offered to allow students the ability to choose courses and not require an entire package. Students would choose the courses that would interest or benefit them.

- **Question** on Mines' ability to offer smaller courses like these for the industry community benefit; Spiegel reported smaller courses could be provided in the continuing education side but not as credit-bearing courses. Mines must comply with state and federal regulations. To offer a graduate certificate, the course must be credit-bearing. A competency marker could be used, but it could not be labeled a graduate degree.

Suggestion made on a study to find what resources are needed to provide smaller, modulated offerings in a credit-bearing stage.

There is demand due to historical industry incidents relative to tailings. A more structured program is desired rather than a series of short courses.

Adjourn

Tina Voelker

Meeting adjourned: 4:02 pm.

Next meeting: October 5, 4:00-5:00 pm via Zoom. For agenda items, please contact Mara Green (mgreen1@mines.edu) 1 week prior.

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

3.1 **Approval of Minutes – September 7, 2022**

Tina Voelker