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

Attendees:

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

Bettina Voelker (Chair)	Р	Christine Baker (LB) P Andy Osborne (NSE) F		Ρ	Owen Hildreth (ME)	
Eric Anderson (HSE)	Р	Karin Leiderman (AMS)		Jamal Rostami (MN)	Ρ	Michael Heeley (EB)
Ebru Bozdag (GP)	А	Juan Lucena (EDS)		Jim Ranville (GC)	Ρ	Luis Zerpa (PE)
Geoff Brennecka (ML)	Р	Zhexuan Gong (PH)	Ρ	Danica Roth (GE)	Ρ	Qi Han (CS)
Elizabeth Davis (HASS)	Р	Dave Marr (CBE)	Ρ	Maxwell Silver (GSG)	А	Lori Tunstall (UCTE / CEE)
Christine Morrison (CH)	А	Salman Mohagheghi				
		(EE)				
Other Regular Attendees and Guests						
Tim Barbari (OGS)	Р	Carolyn Freedman (OGS)	А	Deb Jordan (Trefny)	Ρ	Mara Green (AA)
Jennie Kenney (AA)	А	Denise Winn-Bower (PE)	Ρ	Paul Myskiw (RO)	А	Kendra Stansbury (RO)
Special Guest(s): Wendy Adams (PH), Toni Lefton (HASS)						
	Eric Anderson (HSE) Ebru Bozdag (GP) Geoff Brennecka (ML) Elizabeth Davis (HASS) Christine Morrison (CH) Fr Regular Attendees and Gue Tim Barbari (OGS) Jennie Kenney (AA)	Eric Anderson (HSE)PEbru Bozdag (GP)AGeoff Brennecka (ML)PElizabeth Davis (HASS)PChristine Morrison (CH)Aer Regular Attendees and GuestsTim Barbari (OGS)PJennie Kenney (AA)A	Eric Anderson (HSE)PKarin Leiderman (AMS)Ebru Bozdag (GP)AJuan Lucena (EDS)Geoff Brennecka (ML)PZhexuan Gong (PH)Elizabeth Davis (HASS)PDave Marr (CBE)Christine Morrison (CH)ASalman Mohagheghi (EE)er Regular Attendees and GuestsTim Barbari (OGS)PCarolyn Freedman (OGS)Jennie Kenney (AA)A	Eric Anderson (HSE)PKarin Leiderman (AMS)PEbru Bozdag (GP)AJuan Lucena (EDS)AGeoff Brennecka (ML)PZhexuan Gong (PH)PElizabeth Davis (HASS)PDave Marr (CBE)PChristine Morrison (CH)ASalman Mohagheghi (EE)Fr Regular Attendees and GuestsTim Barbari (OGS)PCarolyn Freedman (OGS)AJennie Kenney (AA)ADenise Winn-Bower (PE)P	Eric Anderson (HSE)PKarin Leiderman (AMS)PJamal Rostami (MN)Ebru Bozdag (GP)AJuan Lucena (EDS)AJim Ranville (GC)Geoff Brennecka (ML)PZhexuan Gong (PH)PDanica Roth (GE)Elizabeth Davis (HASS)PDave Marr (CBE)PMaxwell Silver (GSG)Christine Morrison (CH)ASalman Mohagheghi (EE)FRegular Attendees and GuestsTim Barbari (OGS)PCarolyn Freedman (OGS)ADeb Jordan (Trefny)Jennie Kenney (AA)ADenise Winn-Bower (PE)PPaul Myskiw (RO)	Eric Anderson (HSE)PKarin Leiderman (AMS)PJamal Rostami (MN)PEbru Bozdag (GP)AJuan Lucena (EDS)AJim Ranville (GC)PGeoff Brennecka (ML)PZhexuan Gong (PH)PDanica Roth (GE)PElizabeth Davis (HASS)PDave Marr (CBE)PMaxwell Silver (GSG)AChristine Morrison (CH)ASalman Mohagheghi (EE)er Regular Attendees and GuestsTim Barbari (OGS)PCarolyn Freedman (OGS)ADeb Jordan (Trefny)PJennie Kenney (AA)ADenise Winn-Bower (PE)PPaul Myskiw (RO)A

Welcome

Briefings and Information Items

Office of Graduate Studies

Program 3.0 GPA requirement

Drafted Catalog language sent to Councilors to gain feedback and input, Catalog language expected for 2023-24. Work being done in Registrar's Office on what can be done through Degree Works and the degree audit form. Piloting program GPA of 3.0 would be piloted with a couple departments in the next academic year.

- Question on student's ability to select program requirements from previous Catalogs, and if this can be done for the proposed Catalog language; Barbari noted not many students on probation.
 Language proposed to avoid providing credentials if a student is receiving C's within a degree program.
- **Question** on using only program GPA and not cumulative; Barbari noted other universities use either cumulative alone or cumulative plus the program of study. The cumulative assists with gauging academic standing; cumulative GPA plus program study assists in determining credentials earned.

New graduate student orientation scheduled for Fall, August 18 from 10am-12pm.

Registrar's Office

Add date recommendation

Add date recommendation provided and endorsed by Undergraduate Council. Myskiw reported on reduction of faculty burden with students joining courses sixteen days into the semester. Myskiw intended Graduate Council endorsement and discussion with Faculty Senate. Proposed add date change to one full week, the following Monday, into the semester. The drop date remains the same.

Exceptions to be made for independent studies; unusual circumstances required for other courses to be added following Census Day. New add dates to be added to the Academic Calendar with explanation on



Tina Voelker

Tim Barbari

Paul Myskiw

Census Day being the last day to drop.

Question on prerequisites in graduate courses not being enforced; Myskiw stated prerequisites that are 500-level can be enforced. If this is not occurring, contact Myskiw.

Graduate Student Government No updates from Graduate Student Government.

Curriculum Item(s) for Vote – from 3/16/22

1.1	MEHCANICAL ENGINEERING	Dinesh Mehta
	[CIM 3/1]	
	1 program change: MSPHD-ORWE: Op	erations Research with Engineering
	Routine changes based on Catalog updates removal of MATH531, addition of MATH424	

1.2 MINING ENGINEERING Jürgen Brune [CIM 3/14; Provost 3/14] MNGN582: FUNDAMENTALS OF TAILINGS ENGINEERING II 1 new course: This is the second course in Tailings Management. The first course is MNGN581

Due to recent, catastrophic tailings dam failures, mining constituents have a significant interest in tailings facilities design and engineering. Both courses have been offered in short course format with very good registrations (25 to >50 students per class) twice during 2021. Registrants were from around the world, including Australia, Brazil, Canada, Chile, Cote d'Ivoire, DRC, Mexico, New Caledonia, Peru, South Africa, Suriname, Tanzania, and the U.S. The course delivery has been virtual using Zoom and Canvas, and student satisfaction has been assessed as high. The MN department requests approval to offer the second in the series of courses for academic graduate credit. The interest from the industry is high, and MN expects to recruit from the student registrants into the graduate degree programs in MN at Mines. This course is aligned with the following Mines@150 aspirations: 1) A go-to place for use-inspired research and innovation needed to solve challenges facing industry, society and the environment, 2) A Leader in educating STEM students and professionals, and 3) A preferred partner for talent, solutions and life-long learning.

MOTION: To approve the curriculum items in items 1.1 and 1.2 in an omnibus Council vote by Brennecka, seconded by Morrison. Motion passed unanimously.

UNIVERSITY HONORS PROGRAMS

New Curriculum Item(s)

2.1

Wendy Adams

[CIM 4/8; Provost 4/12] MSNT-TEACH: MS – Teach@Mines 1 new program: This program will be "top-of-mind/first-choice" for future and practicing teachers of science, mathematics, and computer science because it will be one of the only (possibly the only) teacher preparation programs in the country that is exclusively designed for



Maxwell Silver

science, mathematics, and computer science teacher preparation. As such, it is one of the most rigorous programs in the nation with five courses specifically focused on pedagogical content knowledge (ie. how to teach science/mathematics/computer science) using best practices learned from that discipline's field of education research. Additionally, it will be focused on deliberate professional development and all courses are hands-on with 800 hours of practice in a K-12 classroom.

This program will be Online with over 50% of the courses delivered online with a substantial secondary classroom component.

Non-thesis Master of Science with specialties in science teaching, mathematics teaching, and computer science teaching. Expected student population of Mines undergraduates, Mines alumni, and new Mines graduate students. Program expected as a 4+1 with BS, MS, and licensure; working with state on licensure accreditation. All courses are specific to STEM with graduate coursework requiring additional readings in education-research literature and deeper involvement in final projects based on research in the field.

Program to be mixed online and residential with residential components on Saturday or evenings. SCED533 and SCED563 developed into online courses, teaching techniques courses would be hybrid. Program expects 800 hours in-school, in-person interactions. Program is interdisciplinary and housed within the University Honors and Scholars Program (UHSP). Undergraduates expected to take coursework later in BS or after completion to assure new learning built off of existing degree program.

Adams worked with University of Northern Colorado (UNC), worked on program for seven years. Found UNC program too general with less positive feedback. Teach@Mines to be STEM-focused with students welcomed from every degree program. Benefits to Mines include recruitment, retention, and revenue. STEM students of color have reported higher interest in teaching. Teach@Mines would place Mines alumni in local classrooms.

- **Question** on degree name, suggested against Teach@Mines; Adams to work with students and districts for a final degree name.
- **Question** on what is currently being done with Mines undergraduate students; Adams reported undergraduate courses having been developed a few years ago combining nine state and national standards. Coursework has been delivered since 2019; exception for Capstone II. Most filled to capacity when run.
- Question on adding new sections; Adams expects courses to add additional sections as time progresses.
- **Question** on state of Colorado recognition of Mines; program applying to state for undergraduate courses' licensure, once approved MS level can be reviewed.
- **Question** on who is teaching the classes, who will teach classes, and commitment from administration on lines to teach future classes; Adams teaching some classes, CS teaching techniques course, field experience course taught for some time. Program sought practicing teachers with advanced degrees, commitments made with current instructors to continue.
- **Question** on tie in with departments; suggestion made to present at department faculty meetings to gauge interest from faculty and graduate students.

No permanent tenure lines have been associated with the program so far; suggested to avoid instability



of program. Adams full-time teaching faculty.

UHSP supporting adjuncts salaries; have put together financial and strategic plan presented to Provost and President that outlined net excess and need for dedicated faculty lines to remain sustainable. State licensure expected to bring large impact.

2.1.1	[CIM 4/8; Provost 4/9]	
	13 new courses:	MAED505: MATHEMATICAL PRACTICES AND THE SOCIAL
		CONTEXT OF MATHEMATICS
		MAED525: PRE-ALGEBRA AND ALGEBRA TEACHING
		TECHNIQUES
		MAED535: COMPUTER SCIENCE TEACHING TECHNIQUES
		MAED562: K-12 FIELD EXPERIENCE AND BUILDING STUDENT
		RELATIONSHIPS
		MAED564: CAPSTONE CURRICULUM DESIGN I
		MAED565: CAPSTONE CURRICULUM DESIGN II
		SCED515: SCIENTIFIC PRACTICES VS ENGINEERING DESIGN AND
		THE NATURE OF SCIENTIFIC KNOWLEDGE
		SCED533: EDUCATIONAL PSYCHOLOGY AND ASSESSMENT
		SCED545: PHYSICS AND CHEMISTRY TEACHING TECHNIQUES
		SCED562: K-12 FIELD EXPERIENCE AND BUILDING STUDENT
		RELATIONSHIPS
		SCED563: DYNAMIC TEACHING: MOTIVATION, CLASSROOM
		MANAGEMENT, AND DIFFERENTIATION INSTRUCTION
		SCED564: CAPSTONE CURRICULUM DESIGN I
		SCED565: CAPSTONE CURRICULUM DESIGN II
	For course information,	please reference the agenda items or search
	(<u>https://nextcatalog.mi</u>	ines.edu/courseadmin/) in CIM. Contact <u>mgreen1@mines.edu</u> for

access to CIM.

2.2 PHYSICS

[CIM 4/1]

1 program change: CRTG-OPTICS: Optics for Engineering Request made to consolidate tracks into one path. Had been approved by GC and FS with two (2) tracks, was approved by BoT with one (1) track.

- **Question** on who had initiated change with physics department, and if department made aware; Durfee made aware of change and asked to make change within CIM.

MOTION: To approve the program change in Physics to CRTG-OPTICS: Optics for Engineering by Gong, seconded by Davis. 14 for, 1 abstention. Motion passed.

2.3	GEOLOGY & GEOLO	GEOLOGY & GEOLOGICAL ENGINEERING				
	[CIM 4/18, Provost	4/18]				
	1 new course: GEGN568: POINT CLOUD		D DATA ANALYSIS IN EARTH SCIENCE			
		AND ENGINEERING				
	This proposal seeks	This proposal seeks to assign a course number to a course that has been previously				



taught as a Special Topic 598 course. The course is fully developed and has been taught twice (2020, 2021) and was well received. We now seek to formalize this course and schedule it every other year beginning in 2023.

Course comprised of mostly geologists with potential for CEE and geophysics students. Course structured to avoid conflicts with core courses in other departments. Suggestion made to check with CS and AMS for overlap. Roth noted change in CIM form, course to review spatial spectral analysis of topography.

New Business

Council Membership Tabled.

Adjourn

Meeting adjourned: 5:09 pm. Next meeting: May 4, 4:00-5:00 pm via Zoom. Tina Voelker

Consent Agenda The following proposals will <u>not</u> 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 –	April 6, 2022	Tina Voelker
3.2	COMPUTER SCIENCE [CIM 4/7; Provost 4/8]		Qi Han
	and has been popular, explicitly for the course academia (with two co. (<u>https://scholar.google</u> <u>puterinteraction</u>) and in	CSCI538: AUGMENTED REALITY ght in person. It has been offered twice a and the department has secured a dona e. The field of augmented reality is rapidl nferences in the top 20 venues of human <u>e.com/citations?view op=top venues&h</u> ndustry (e.g., related to Facebook's Mete specifically, help Mines to be a leader in	tion of headsets to use y developing both in p-computer interaction <u>l=en&vq=eng_humancom</u> averse plan). It aligns with
3.2.1	Security online certifica	CSCI560: FUNDAMENTALS OF COMPUT for working professionals as part of the ate, so it has about 75% content overlap Mines students to take, we need to make ses.	Cyber Physical Systems with CSCI 471. Now that
3.3	MINING ENGINEERING [CIM 4/8]		Jamal Rostami
	2 program changes:	MSPHD-ERDE: MS and PhD Program in Development Engineering MSPHD-MNEG: MS & PhD Program in I	
	Request to add MNGN	625 as a required course for MS/PhD in N	Aining Engineering and



Earth Resource Development Engineering (ERDE).

