Colorado School of Mines – GRADUATE COUNCIL MEETING MINUTES February 15, 4:00 – 5:00 pm, via Zoom

Attendees:

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

Р	Bettina Voelker (Chair)	Р	Christine Baker (LB)	Р	Andy Osborne (NSE)	Р	Owen Hildreth (ME)
Р	Eric Anderson (HSE)	Р	Soutir Bandyopadhyay	Р	Jamal Rostami (MN)	Α	Michael Heeley (EB)
			(AMS)				
Р	Jeffrey Shragge (GP)	Р	Juan Lucena (EDS)	Р	Jim Ranville (GC)	Р	Luis Zerpa (PE)
Α	Kester Clarke (MME)	Р	Uwe Greife (PH)	Р	Danica Roth (GE)	Ρ	Dong Chen (CS)
Α	Jay Straker (HASS)	Р	Dave Marr (CBE)	Р	Liam Witteman (GSG)	Ρ	Lori Tunstall (CEE)
Р	Christine Morrison (CH)	Α	Atef Elsherbeni (EE)	Р	Gabriel Walton (UCTE)		

Other Regular Attendees and Guests

Р	Tim Barbari (OGS)	Р	Carolyn Freedman (OGS)	Α	Jenny Briggs (OGS)	Α	Mara Green (AA)
Α	Wendy Adams (HNRS)	Α	D. Scott Heath (RO)	Р	Paul Myskiw (RO)	Α	Roxane Aungst (OGS)
Р	Sam Spiegel (Mines	Α	Suzanne Beach (Payne)	Р	Jen Gagne (Р	Kendra Stansbury (RO)
	Online)				Grad Admissions)		

Special Guest(s): Mary Doherty (GE), Kelsie Diaz (CS/EE), Wendy Zhou (GE)

Welcome Tina Voelker

Briefings and Information Items

Office of Graduate Studies

Tim Barbari

Barbari reminded Councilors of the April 15th Resolution from the Council of Graduate Schools; period where offers of financial aid are being sent to thesis students for Fall 2023. Students have until 4/15 to accept a financial aid offer. Students cannot be pressured into accepting offers earlier than 4/15. A reminder would be sent in the Graduate Admissions newsletter. Barbari noted the importance of the reminder for new faculty.

- **Question** if the preferred language is codified and if that language can be circulated; Barbari could provide the language to Council, the language had been shared on an individual basis.

Suggestion made to provide the wording of the April 15th Resolution. Barbari noted the template admissions offer has language dedicated to the Resolution with a link to more information.

Registrar's Office Paul Myskiw

Myskiw reported a new degree audit analyst position had been hired to the Registrar's Office. The position would allow to scribe degree requirements of graduate programs; the first focus would be master's non-thesis and certificate programs. Outreach expected from the Registrar's Office on codification of non-course requirements for degrees. The data would be input into Cognos.

Barbari reported the desire to add non-course degree requirements like qualifying exams and proposal defense to Degree Works may allow for replacement of the degree audit process; change may allow departments running systems to track these non-course requirements to view the information in Banner.

An email had been sent to faculty that are advisors on campus with advisees. Registrar's Office has worked the last six to seven months cleaning up advisee lists due to complaints of inaccuracy. Students that have graduated or are no longer attending have been removed from the list; advisors had been



asked to verify that the list is accurate. Next steps include a front-end service to allow advisors to do self-maintenance of advisee lists once assigned.

<u>Graduate Student Government</u>

Liam Witteman

GSG held a townhall with a DI&A focus; GSG gathered feedback from graduate students in an open session.

GSG preparing for the Graduate Research Symposium coming up April 5-6, 2023; advertisements had been established on the student side but Witteman asked Councilors to disseminate information to faculty and departments (click here for more information). Deadlines for submission of presentation to GRADS 2/28.

Items for Council Vote – from 1/18/23

1.1 MINING ENGINEERING

Jamal Rostami

[CIM 1/17]

1 program change:

MSPHD-ERSE: MS and PhD Program in Earth Resources Science and Engineering

Dept of Mining engineering offers MS and PhD degrees under Earth Resource Development Engineering (ERDE). This program allows faculty in our dept to recruit and advise students from various engineering backgrounds to work on mining and minerals related topics. There has been much demand and inquiry to allow students with science background to join the program and work on these topics. ERDE by nature is multidisciplinary and we are opening it to the possibility of having students with Science background to join the program. With this change, we are also proposing to change the name of the program to "Earth Resources Science and Engineering (ERSE)".

In brief this program change involves:

- Change the requirements for ERDE admission so that students from non-engineering backgrounds can also be admitted without having to fulfill the requirements for an engineering undergraduate degree
- Change the name of ERDE Earth Resource Development Engineering to ERSE Earth Resources Science and Engineering

MOTION: To approve the program change to MSPHD-ERSE: MS and PhD Program in Earth Resources Science and Engineering by Shragge, seconded by Rostami. Motion passed unanimously.

1.2 MECHANICAL ENGINEERING

Owen Hildreth

[CIM 12/13]

1 program change: MSPHD-MECH: MS & PhD – Mechanical Engineering Updating list of approved Research Core Courses to ensure that enough courses are taught so that students can graduate on time.

Hildreth provided context for the change. Graduate students are required to take three courses from a handful of courses in a different division; problem had been identified that not enough of the courses were offered in a timely manner for students to graduate on time. As a temporary fix while reevaluating if this is the path for the degree, the course listing has been expanded for each category with courses always taught once or twice a year.



MOTION: To approve the program change to MSPHD-MECH: MS & PhD – Mechanical Engineering by Rostami, seconded by Morrison. Motion passed unanimously.

1.3 **GEOPHYSICS**

Jeffrey Shragge

[CIM 1/10]

1 program change: MPMSPHD-GP: MP, MS & PhD – Geophysics & Geophysical

Engineering

The structure of the GP graduate degrees is currently over-prescriptive in the courses required to satisfy the three presently listed coursework focus areas of theory, applied and computation. This structure also appears to downplay the importance of the "Earth and Space" focus area by not required such coursework in the GP graduate degree programs. We are seeking a programmatic change that affords GP graduate students (and their committees) a greater flexibility in choosing the courses to fulfill their GP graduate degree program and is better tailored to our student's specific research and career goals. We are also looking to rebalance the degree emphasis by requiring coursework in the "Earth and Space" focus area in addition to the three others identified above. These modifications are consistent with the recent broadening the scope of the departmental research and teaching activities over the past few years. In addition, through this programmatic change the GP Department will be expanding the offerings and diversifying the delivery of GP graduate program available to students, which is consistent with the stated Mines@150 goals.

The program has three themes in theory, application, and computing. A single course was required to satisfy those requirements but the department found it was too prescriptive. The program changed proposed would expand a broader range of courses under the three themes along with an added "Earth and Space" theme.

Owners of the courses listed in CIM were contacted.

MOTION: To approve the program change to MPMSPHD-GP: MP, MS & PhD – Geophysics & Geophysical Engineering by Morrison, seconded by Hildreth. Motion passed unanimously.

New Business

Incorporating Internships into Degree Programs

Tim Barbari

Barbari reported Mines was out of compliance with Curricular Practical Training (CPT). A zero-credit placeholder course was given to students looking to do internships in the summer and academic year but not part of the curriculum.

CPT refers to three ways to make it part of the curriculum: the internship is required for the degree, the internship is part of a credit bearing course, or an internship that is related to research.

Barbari provided two options for faculty consideration and feedback: an institutionally created internship track that would apply to the degree of the student or a credit-bearing internship course for non-thesis master's degrees which would be three credits; both options allow students to be paid. Barbari noted a course would require more approval at the program level, the course may be listed under a generic prefix. Barbari reported a credit-bearing internship may require more work; each faculty member listed as instructor of record would make learning outcomes and goals alongside assessments



and other deliverables of the course. Either option would be open to domestic and international students. CPT would not appear in Catalog language but would link to the International Student and Scholars Services (ISSS) office.

Barbari had floated the options at a meeting with department heads present; non-thesis master's degree with internship option had been discussed as a less onerous route.

The non-thesis master's degree with internship would not be a degree that appears on the application form; the option could be opted into by students.

Question if the degree option would apply to existing degree programs; Barbari reported the
degree option with internship would then be applied to all non-thesis master's currently
offered.

Myskiw reported the international rule for students being eligible to work in the United States requires work to be related to the academic program they are in; the options presented by Barbari would not only be limited to international students, however. The degree option with internship would double the number of non-thesis master's degrees tracked in the system.

- **Question** on why the credit-bearing course is three credits; Barbari chose the three-credit figure as a common model. The hours of a full-time internship would match with a three-credit course.
- Question if international students cannot work during the summer unless participating in an internship; Barbari confirmed an international students' student visa requires work be completed through the university. Work done during the summer can reduce the hours of Optional Practical Training (OPT). The OPT done during a program counts against the total hours; CPT does not do so.
- Question if this has been distributed to stakeholders for credit pricing with the three-credit
 course internship model; Barbari reported this has been discussed among senior leadership and
 would be proposed to the Board.
- Question if this has been asserted as cost-neutral for research groups; Barbari noted if the
 credit-bearing course is chosen, information would be marshalled to see how research programs
 are affected what it would look like for tuition recovery on grants.

Councilor noted faculty and staff feel disregarded by university administration; faculty would be interested in seeing tuition models. Barbari reported administration would like a decision to allow time between February and September to make needed adjustments for grant budgets and current budgets.

The credit-bearing course option could be submitted now, without Catalog language, and be used as an elective.

Question if departments can choose an option, rather than implementing only one option;
 Barbari confirmed this could be an option.

Councilor noted the non-thesis master's with internship option would be less disruptive. Barbari clarified the non-thesis master's with internship would not substitute any course credits.

Mandatory Dismissal below 2.0 GPA

Tim Barbari

Barbari provided background on probation and dismissal; students on probation for two semesters in a



row have a cumulative GPA of less than 3.0. Students falling under this category are under discretionary dismissal where students produce a remedial plan, OGS approves the remedial plan. If the milestones of the remedial plan are not met, the student could be dismissed.

Barbari proposed adding language to mandatory dismissal to include:

"Failure to achieve a cumulative GPA of at least 2.00 after two semesters on academic probation."

- Question if there are clusters within certain departments and if those departments can be named; Barbari reported computer science has been overrepresented in some cases. The numbers are in the single digits; students on probation have a 2.5 or 2.7 and can correct themselves.
- **Question** if there have been cases of recovery; Barbari noted recovery had not been reported from below a 2.00.
- Question if Barbari can deny a remedial plan; Barbari reported having not turned down a remedial plan if the program advisor has approved it.

2.3 **COMPUTER SCIENCE**

Kelsie Diaz

[CIM 2/6]

1 program change: MSPHD-CS: MS & PhD – Computer Science Changing pre-requisite requirements based on core course changes in undergraduate catalog

Due to core changes in the undergraduate curriculum, CSCI101 and CSCI102 are now becoming CSCI128. CSCI261 and CSCI262 have been converted to CSCI200 and CSCI220. Prerequisites listing the old course numbers had been updated.

2.4 **CHEMISTRY**

Christine Morrison

[CIM 2/8]

1 program change: MPMSPHD-CH: MP, MS & PhD – Chemistry Number of credits for MS degree was decreased from 24 to 18 credits, so that it now matches the number of credits required for the PhD degree.

The course credits of the MS degree had been identified as higher than what was required for the PhD degree. Department noted this could be a problem if a PhD student switches from the PhD program into the MS and are required to take additional courses.

Language was included to make clear that course credits for the PhD must be at least eighteen to match the university's requirements..

2.5 **GEOPHYSICS**

Jeffrey Shragge

[CIM 1/31]

1 program change: XCR-PEGP: Graduate Certificate in Energy Geophysics We are requesting both a name and programmatic change for the existing Graduate Certificate in Geophysics.

The name change is also consistent with market research (including by Mines personnel)



that finds "energy" to be a more compelling term than "petroleum" with the demographic most likely to enter the Graduate Certificate program. Thus, it is likely to have broader appeal and likely increase enrollment.

The programmatic change would allow us to broaden the types of courses offered in this program beyond petroleum (i.e., distributed fiber optic sensing; carbon capture, utilization, and storage), and provide a path for future extensions in the direction of geothermal, geophysical engineering (e.g., solar and wind resources), and locating the minerals required for the energy transition. It would also provide prospective students with greater flexibility in designing a graduate certificate program that is better aligned with their career goals and objectives.

Finally, we note that all the listed courses already exist as online 8-week asynchronous courses; thus, there is minimal overhead for contributing faculty associated with this proposed name and programmatic change

Currently, the graduate certificate lists four three-credit courses and students choose four out of the four. The list has been expanded to six courses to provide additional classes. All courses listed are online, asynchronous.

2.6 **GEOLOGY & GEOLOGICAL ENGINEERING**

Wendy Zhou

[CIM 2/7]

1 program change: CRMS-GISG: GIS & GeoInformatics – Certificates and MSNT Because this is newly formed into the GIS master's degree as an ONLINE degree, there are a few changes to this program.

Zhou presented on the program change. The degree had been converted from a face-to-face degree into an online degree. Several new courses had been developed. The faculty list had also been updated.

Faculty Mentorship Feedback Program

Christine Morrison

Tabled for 3/1.

Adjourn Tina Voelker

Meeting adjourned: 4:58 pm.

Next meeting: March 1, 4:00-5:00 pm via Zoom. Please send all agenda items to Mara Green (mgreen1@mines.edu) 1 week in advance.

<u>Consent Agenda</u> 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** – February 1, 2023

Tina Voelker

3.2 **CHEMISTRY**

Carolyn Freedman

[CIM 2/10]

1 program change: CRTG-GE: MSPHDCERT – Analytical Geochemistry This submission reflects only program elective updates and the removal of an outdated sentence. Specifically:



Master of Science and Doctor of Philosophy

Geochemistry Degree Track

MS Course List

Reordered list for ease of reference

Removed GEOL 535 Litho Ore Forming Processes, as the course is no longer being offered.

PhD Course List

Reordered list for ease of reference

Removed GEOL 535 Litho Ore Forming Processes, as the course is no longer being offered.

Environmental Biogeochemistry Degree Track

Reordered course list for ease of reference

Under 4. One Earth Science-Focused class,

Added GEGX 571 Geochemical Exploration

Graduate Certificate of Analytical Geochemistry

In the Electives list:

Reordered the list of ease of reference

Added CEEN 562 Environmental Geomicrobiology

Professional Masters in Environmental Geochemistry

Removed a sentence about requiring 1 lab course—this is a vestigial sentence mistakenly missed during a prior year's edit.

In the Electives list:

Added CEEN 562 Environmental Geomicrobiology

Removed GEOL 535 Litho Ore Forming Processes, as the course is no longer being offered.

Added GEGX 571 Geochemical Exploration

3.3 **ENGINEERING, DESIGN, AND SOCIETY**

Carolyn Freedman

[CIM 2/14]

2 course changes: EDNS515: INTRODUCTION TO SCIENCE AND TECHNOLOGY

STUDIES

Changing course name to Introduction to Science and Technology Studies (from Introduction to Engineering in Society) and updating Catalog description listing. No other changes to course learning objectives or content.

EDNS590: RISKS IN HUMANITARIAN ENGINEERING AND SCIENCE Updating the course Catalog description. No other changes to course content or learning

3.3.1 [CIM 2/13; Provost 2/14]

objectives.

EDNS579: COMMUNITY-BASED RESEARCH METHODS 1 new course:

The new course supports alignment with Higher Learning Commission guidance that required courses for graduate level programs formally both require graduate-level work of students and offer graduate level credit to students.

This course is to be cross listed with existing course EDNS479, incorporating additional assignments appropriate to students seeking graduate-level credit. It is planned to be delivered as a Residential course.

This course supports the Humanitarian Engineering and Science Program's efforts to advance the MINES@150 vision, specifically by:



- Expanding offerings for post-graduate education by assuring that a greater diversity
 of students to enroll in the HES master's degree and take our courses for appropriate
 credit
- Growing the scale and impact of our research by facilitating potentially new interdisciplinary partnerships among HES faculty and students.
- Strengthen affinity for Mines among our students by supporting an intellectual space for students to find a home and core group of peers and faculty.

3.3 METALLURGICAL & MATERIALS ENGINEERING

Nancy Progar

[CIM 2/9]

24 course deactivations: MTGN505: CRYSTALLOGRAPHY AND DIFFRACTION

MTGN516: MICROSTRUCTURE OF CERAMIC SYSTEMS

MTGN517: REFRACTORIES

MTGN518: PHASE EQUILIBRIA IN CERAMIC SYSTEMS MTGN534: CASE STUDIES IN PROCESS DEVELOPMENT MTGN541: INTRODUCTORY PHYSICS OF METALS

MTGN542: ALLOYING THEORY, STRUCTURE, AND PHASE

STABILITY

MTGN543: THEORY OF DISLOCATIONS

MTGN544: FORGING AND DEFORMATION MODELING MTGN546: CREEP AND HIGH TEMPERATURE MATERIALS MTGN547: PHASE EQUILIBRIA IN MATERIALS SYSTEMS MTGN551: ADVANCED CORROSION ENGINEERING MTGN552: INORGANIC MATRIC COMPOSITES

MTGN554: OXIDATION OF METALS

MTGN561: PHYSICAL METALLURGY OF ALLOYS FOR AEROSPACE MTGN571: METALLURGICAL AND MATERIALS ENGINEERING LABORATORY

MTGN581: WELDING HEAT SOURCES AND INTERACTIVE

CONTROLS

MTGN582: MECHANICAL PROPERTIES OF WELDED JOINTS MTGN583: PRINCIPLES OF NON-DESTRUCTIVE TESTING AND EVALUATION

MTGN584: NON-FUSION JOINING PROCESSES

MTGN587: PHYSICAL PHENOMENA OF WELDING AND JOINING

PROCESSES

MTGN591: PHYSICAL PHENOMENA OF COATING PROCESSES

MTGN671: ADVANCED MATERIALS LABORATORY MTGN672: ADVANCED MATERIALS LABORATORY

These classes have not been offered recently and are not planned to be offered. We'd be better off creating new courses with the new faculty in the department as many of our courses were quite faculty-specific.

3.4 MATERIALS SCIENCE

Carolyn Freedman

[CIM 2/13]

1 program change: MSPHD-MATSCI: MS & PhD – Materials Science This update is to clarify that electives need not be limited to MLGN prefix courses. This is not a change in practice.



3.5 **QUANTITATIVE BIOSCIENCES AND ENGINEERING**

Carolyn Freedman

[CIM 2/14]

1 program change: MSPHD-BIO: MS & PHD – Quantitative Biosciences and

Engineering

This update is to add existing courses to the QBE Elective course list.

