

Colorado School of Mines – GRADUATE COUNCIL MEETING MINUTES
February 3, 4:00 – 5:00 pm, via Zoom

Attendees:

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

P	Neal Sullivan (Chair)	P	Amy Hitchner (LB)	P	Andy Osborne (NSE)	P	Owen Hildreth (ME)
P	Dave Benson (HSE)	P	Karin Leiderman (AMS)	P	Gabe Walton (UCT)	P	Ebru Bozdag (GP)
P	Juan Lucena (EDS)	P	Jim Ranville (GC)	A	Zhenzhen Yu (MME)	P	Geoff Brennecka (ML & MT)
P	Tulay Flamand (EB)	P	Danica Roth (GE)	P	Dejun Yang (CS)	P	Elizabeth Davis (HASS)
P	David Marr (CBE)	P	Maxwell Silver (GSG)	P	Luis Zerpa (PE)	P	*Reza Hedayat (CEE) proxy for Gabe Walton (UCT)
P	Christine Morrison (CH)	P	Gongguo Tang (EE)	P	Jeremy Zimmerman (PH)		

Other Regular Attendees and Guests

A	Justin Bush (CEE)	p	Carolyn Freedman (OGS)	A	Jane Ko (AA)	A	Jennifer Velloff (Tref)
A	Tim Barbari (OGS)	A	Cassie Glenn (CEE)	P	Paul Myskiw (RO)	A	Denise Winn-Bower (PE)
P	Dorothy Cheng (CS,EE,ME)	A	Jennie Kenney (AA)	P	Mara Green (AA)		

*Angel Abbud-Madrid (MN), Suzanne Beach (PI), Jamal Rostami (MN)

Welcome

Neal Sullivan

Briefings and Information Items

Office of Graduate Studies

Tim Barbari

- Catalog Change – Non-degree Credit Limits
- Catalog Change – Academic Probation and Allowance for Part-Time Students
- Catalog Change – Combined Undergraduate/Graduate Program Definition

Office of Graduate Studies items tabled for the following Graduate Council meeting (2/17).

Registrar’s Office

Paul Myskiw

Myskiw begins by updating Councilors on the third day of the new degree audit implementation. The new educational planner feature will pertain to graduate programs. The hope is to replace the current degree audit paper form. The core features will be demonstrated later to Council prior to it being implemented in March 2021.

Myskiw states that the Provost requests feedback from faculty on ideas and thoughts for the Fall 2021 semester. This feedback can be related to classroom goals, what faculty is aiming to see, and what Academic Affairs can do regarding the class schedule.

Sullivan introduces feedback from 10 of 40 Mechanical Engineering faculty responses. Feedback favored pre-pandemic conditions. Sullivan encourages Councilors to speak with their departments and programs on Fall scheduling feedback.

A question is asked regarding the timing of vaccine distribution to university faculty and staff. Sullivan recalls information provided to the Provost from Peter Han that vaccines are expected to be fully implemented in the summer.

Hildreth references the Colorado Department of Public Health and Environment PDF chart for the distribution of the COVID-19 vaccine (<https://drive.google.com/file/d/1T9i6OsbHBLXvaRalgzGg9WuPWlStkxrz/view>). This provides information on the phases and tentative dates of vaccine distribution.

Graduate Student Government

Maxwell Silver

No updates from Graduate Student Government.

Silver asks on behalf of the graduate students if graduate students are included in the round of vaccinations offered to teaching faculty.

There has been some information regarding higher education instructors not being considered for the earliest rounds of vaccinations.

Curriculum Items – Request for Council Vote (from 12/16/20)

1.1 HYDROLOGIC SCIENCE and ENGINEERING

David Benson

[status: CIM 12/9]

1 program change: MSPHD-HY: MS & PhD – Hydrologic Sci & Eng

This update expands the number of courses that students can take under the Hydrology, Policy, and Management (HPM) track. The course list is being expanded for two reasons: (1) in response to combined-degree students who want to complete their HSE degree and the HPM track in two semesters and need more course options; (2) to keep pace with the growing number of social science-based courses being developed on campus that are relevant to water professionals.

MOTION: To approve 1 program change to the Hydrologic Science and Engineering MS and PhD program in Hydrologic Sci & Eng as championed by David Benson by Brennecka; seconded Walton. No abstentions. APPROVED.

1.2 ECONOMICS and BUSINESS

Tulay Flamand

[status: CIM 12/4]

1 course change: EBGN578: Business Operations and Venture Planning

Name and description change to better reflect course content. Name changed from “Operations and Information Systems”, course offered changed from Fall to Spring, effective date changed to Fall 2021.

MOTION: To approve the Economics and Business 1 course change to EBGN 578: Business Operations and Venture Planning as championed by Tulay Flamand by Brennecka; seconded Davis. No abstentions. APPROVED.

1.3 APPLIED MATHEMATICS and STATISTICS

Karin Leiderman

[status: CIM 12/11; Provost approved: 12/11]

1 new course: MATH570: Mathematical Modeling of Spatial Processes in Biology

AMS has run this course twice as a special topics course (MATH 498/598) and would like to offer it more regularly.

MOTION: To approve the Applied Mathematics and Statistics 1 new course MATH 570: Mathematical Modeling of Spatial Processes in Biology as championed by Karin Leiderman by Brennecka; seconded Zimmerman. No abstentions. APPROVED.

1.4 **OPERATIONS RESEARCH with ENGINEERING**

Alexandra Newman

[status: CIM 12/13; Provost approved: 12/14]

1 new course: ORWE581: Optimization Models in Manufacturing
Helps with the OR MS-NT program and provides an elective within the Advanced Manufacturing Certificate and MS Program. the course delivery is on-line.

MOTION: To approve the Operations Research with Engineering 1 new course ORWE 581: Optimization Models in Manufacturing as championed by Alexandra Newman by Brennecka; seconded Morrison. No abstentions. APPROVED.

Continuing Curriculum Items – Continued Discussion (for vote 2/17/21)

2.1 **MECHANICAL ENGINEERING**

[status: CIM 1/7 & 1/17]

4 program changes: CERTMSPHD-SPACE: CERT, MS, & PhD – Space Resources
*Program updates include the addition of clarification about the PhD program including process and expectations for the Qualifying Exams, Dissertation Research Proposals and Defense and Required number of Publications and Presentations. Addition of new courses to the SPRS Elective list. Text updates throughout for clarification. **Championed by Angel Abbud-Madrid.***

Madrid addresses questions from the previous Graduate Council meeting (1/20) regarding repetition of admission information that is also listed on the general Graduate Admissions page within the Catalog. The information is listed within the Space Resources page to provide students with the admissions information initially without searching for it.

A question is asked on the method for keeping the general Graduate admissions page information consistent with that of the Space Resources graduate program page; there would be potential for inconsistencies in the future between the two pages.

Currently, there are not inconsistencies within the Catalog and the information is duplicative. The main argument brought up by Council members is the future measures to avoid inconsistencies in Catalog language (this is applicable to all programs within the Catalog that list duplicative information for admissions).

CERTMS-ADVMAN: CERT & MS – Advanced Manufacturing
*Changes to language in Graduate Certificate in Additive Manufacturing. Certificate is being changed from Advanced Manufacturing to Additive Manufacturing, changes to core requirements of Additive Manufacturing, changes to language in Master's of Science in Advanced Manufacturing (non-thesis), added selection on electives, language changes to Mines' Combined Undergraduate/Graduate Degree program and electives. **Championed by Craig Brice.***

XCR-ADVMO: Graduate Certificate – Smart Manufacturing
*Language change. Course change: EBG576 (removed), addition of ELECT → allow students to select from courses in Advanced Manufacturing Electives. **Championed by Craig Brice.***

MSPHD-MECH: MS & PhD – Mechanical Engineering
Major edits to the structure of the Mechanical Engineering PhD qualifying exam to streamline the exam, improve consistency across the department, expand qualifying exam options to better reflect the academic needs of the department's PhD students. Language on prerequisites have

[status: CIM 1/7; Provost: 1/8]

Owen Hildreth

MEGN651: Advanced Computational Fluid Dynamics

This course covers fundamentals of computational fluid dynamics for stimulating unsteady incompressible fluid flows, including heat and mass transport. The course is modeled on similar courses offered at most top research institutions but lacked at Mines. Course will expand offerings at Mines and will grow the scale and impact of ME research.

2.2 **MATERIALS SCIENCE**

Geoff Brennecka

[status: CIM 1/15]

1 course change: MLGN517: Theory of Elasticity

Cross-listed with MEGN510; changes made to maintain consistency. No other changes.

2.3 **ECONOMICS and BUSINESS**

Tulay Flamand

[status: CIM 1/18]

1 program change: MS-ETM-NT: Engineering and Technology Management (ETM) Master of Science

Deletion of electives: EBGN 515, 567, 573, 5XX from "Technology Management and Innovation" list. These courses have not been offered in about 5 years. Added EBGN 578 to this list.

1 new course: EBGN544: Innovate X

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.

2.4 **ELECTRICAL ENGINEERING**

Dorothy Cheng

[status: CIM 1/13]

1 program change: MSCR-SEPS: Smart-Grid, Power Electronics, and Electrical Power Systems

Language changes, no substantive changes to the program itself.

2.5 **APPLIED MATHEMATICS and STATISTICS**

Karin Leiderman

[status: CIM 1/14]

1 program change: MSPHD-AMS: MS & PhD – Applied Math/Statistics

*Change to required coursework and language within the program. Courses changed: **Specialty in Computational & Applied Mathematics**; MATH501 (removed), **Specialty in Statistics**; MATH530 (removed), MATH560 (added), **Specialty in Computational & Applied Mathematics**; MATH501 (removed), MATH588 (added), **Specialty in Statistics**; MATH530 (removed), MATH 560 and 588 (added).*

1 course change: MATH531: Theory of Linear Models

Course name changed from "Statistical Methods II" to Theory of Linear Models.

Over time, the content of MATH531 has become less focused on preparing graduate statistics students and more as a 500-level version of MATH424. The material in this course will be taught in a more mathematical perspective. Change in prerequisites, course description changed to reflect changes.

2.6 CIVIL and ENVIRONMENTAL ENGINEERING

Reza Hedayat

[status: CIM 1/12 & 1/13]

2 program changes: MSPHD-CEE: MS & PhD – Civil Eng & Environmental Eng

*Language clarification, addition and removal to core courses in **Structural Engineering**: CEEN543 (removed), CEEN545 (added), CEEN533 (added).*

XCR-ENVMOD: Graduate Certificate in Environmental Modeling

Number of course credits changed from 12 to 9. The elective course is eliminated to reduce the required number of courses needed for the certificate program to make it more appealing, accessible, and affordable with better student retention for the timely completion of the certificate program in one year.

1 course change: CEEN595: Analysis of Environmental Impact

Course descriptions change; more than 30% of description changed in order to reflect nature of the course; no other changes made.

2.7 QUANTITATIVE BIOSCIENCES and ENGINEERING

Karin Leiderman

[status: CIM 1/16; Provost: 1/17]

3 new courses: BIOL500: Cell Biology and Biochemistry

This course will provide students with deep biological insight as well as hands-on experience of studying a biological question at the level of the cell. Meanwhile discussions on launching a new interdisciplinary undergraduate biological engineering program are ongoing on campus. As a core course for these two programs, this Cell Biology and Biochemistry course is necessary to be offered as a regular course in every academic year.

This course has been previously offered as a BIOL and CHGN special topics course.

BIOL510: Bioinformatics

This course will be mainly delivered by lectures. Because of the interdisciplinary nature of the course, the backgrounds of the students to take course will be very diverse. Therefore, face-to-face interactions are important to timely address various students' needs to successfully deliver knowledge to the students.

This course will be cross listed with CSCI578 which is an existing course within the Catalog.

BIOL520: Systems Biology

This course provides students as introduction to the emerging field of systems biology. It will consist of lectures, group discussion sessions, and problem-solving sessions and/or computational labs. Meanwhile discussions on launching a new interdisciplinary undergraduate biological engineering program are ongoing on campus. As a core course for these two programs, this Systems Biology course is necessary to be offered as a regular course in every academic year.

This course has previously been offered as a MATH special topics course.

A question is asked regarding these departments contributing Faculty to teach these three proposed courses. Leiderman states that these courses have already been taught for two years as they have been core-courses for the program and did not have Catalog numbers assigned to them.

No New Curriculum Items

Graduate Council Subcommittees

Neal Sullivan

- *Advisor / Advisee Procedures and Expectations* – Can document be sent to Graduate Program Coordinators for each department and program? Note that document is non-binding.
 - *Document has been uploaded to Canvas under Agenda items*

Guideline document has been created by the subcommittee. Sullivan explains the intent to distribute it to the respective graduate program managers across the university in the hope that this document will be shared with faculty that advise graduate students.

Everyone has an opinion of expectations between a graduate advisor and advisee and because there is so much disagreement on what kind of expectations there might be; Sullivan states that the key element is the word document being a guideline.

A concern is brought up on the title being Procedures and Expectations; procedures must be followed and hold legal connotation versus titling this document as guidelines that can be suggested or recommended. The title should be phrased in a non-binding nature.

Sullivan brings up a discussion point from the subcommittee on workload and hours spent on research. The document provides wording on evaluation and reports.

A point is brought up regarding mention of expectations for Teaching Assistant relationships and whether this should be brought up within the document as well. Faculty can provide feedback to students; however, there is not a mechanism for students to provide feedback to faculty whether that is in advising or structures within a class.

An option raised by Council is to provide a section for feedback and communication.

A comment is made on graduate students having a lack of resources to go to when a relationship with an advisor falls apart and requires a mediator; students are advised to speak with the department head, and many do not do so believing the department head will be biased toward the Faculty in question.

Another concern addressed is students taking one credit versus ten credits having discrepancies in working schedule; due to the complexity of the subject of credits the document will not make mention of credits.

A question is asked on whether this document has been passed to Graduate Student Government for review; Silver responds that this document may be viewed as an additional tool for advisors to use when there is an issue within the advisor/advisee relationship and expresses the concern of a power dichotomy between the advisor and advisee roles.

A suggestion is made to remove the mention of hours expectations from the document entirely due to the discussion being variable across departments.

Benson states that during time as a director for the Hydrology program, there would be cases of bad advisors and in trying to enforce a better relationship—accountability was absent due to the lack of documentation. Despite the document being drafted within the subcommittee not being enforceable, it will provide guidelines for advising issues.

Until a consensus is reached with the drafted document, it will remain within Council prior to being

addressed by Graduate Student Government and Faculty Senate.

Adjourn

Neal Sullivan

Meeting adjourned at 5:13 pm.

Next Meeting: February 17, 4:00 – 5:00 pm, via Zoom.

Consent Agenda

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

- **Approval of Minutes – January 20, 2021**

Neal Sullivan