

FACULTY SENATE MEETING MINUTES

March 8, 2:00 – 4:00 pm, Green Center 224 and Zoom

Attendees:

Voting Members: 15 total (8 needed for quorum). Quorum was present

P	Sebnem Duzgun (Chair)	P	Ventzi Karaivanov (ME)	P	Linda Figueroa (CEE/MN)	P	Joseph Horan (HASS)
P	Jeff King (MME)	P	Yvette Kuiper (GE)	P	John McCray (CEE)	P	Cynthia Norrgran (CBE)
P	Bettina Voelker (CH)	A	Lawrence Wiencke (PH)	P	Pat Kohl (PH)	P	Brandon Dugan (GP)
P	Sid Saleh (EB)	P	Deb Carney (AMS)	P	Soutir Bandyopadhyay (AMS)		

Other Regular Attendees and Guests

P	Tracy Gardner (Trustee)	P	Rick Holz (AA)	P	Paul Myskiw (RO)	A	Colin Terry (Student Life)
P	Sam Spiegel (Trefny)	P	Ethan Lewellin (USG)	P	Maxwell Silver (GSG)	P	Mara Green (AA)
P	Vibhuti Dave (UGS)	P	Tim Barbari (OGS)	P	Lori Kester (EM)	P	Patricia Anderson (Library)
P	Karla Perez-Velez (CASA)	P	Deb Jordan (Trefny)	P	Tim Sorensen (PE)		

Special Guest(s): Werner Kuhr (Director of McNeil Center of Entrepreneurship and Innovation), Mike McGuirk (CH), Junko Munakata Marr (CEE)

Welcome

Sebnem Duzgun

Duzgun provided updates for Senators. Mines have planned to allocate for an ombudsperson office; the assignment will be external.

The online survey results have been gathered; its results will be shared later.

Academic Affairs

Rick Holz

Holz welcomed Senators to the hybrid meeting.

Masks on Campus

Holz reminded faculty that the mask requirements have been lifted in classrooms; this decision was made in line with Colorado State University and the University of Colorado. Jefferson County had dropped its COVID rating from medium to low in the last week. Three students living on campus have tested positive for COVID and thirteen people in the community. Mines to assess again in 2023.

- **Question** on metrics that may be used for COVID policies; Holz stated there have been discussions, but a specific metric has not been set, new variants and increase in cases will be assessed carefully. Mines will continue to monitor trends in Jefferson County. Senator noted difficulty in the past with people not adhering to policy.
- **Question** on requiring a booster for the start of the Fall semester; feedback would be gathered from Senate, department heads, and the deans prior to a decision being made. Mines would monitor CDC and Jefferson County requirements on new variants.
- **Question** on the required booster being the first or second shot; the booster has not been required for Fall. If required, Mines will follow CDC and other expert guidelines on booster requirements within a certain period prior to the start of the Fall semester.
- **Question** on resistance to the vaccine mandate and if any students were penalized; 89.7% of students are vaccinated and all others have gone through the Colorado exemption process. Disciplinary action was not needed during the observance of federal guidelines. Students that had not provided vaccine status were reached out to directly. 20-30 people in AA had not

complied, the majority had waited too long to provide information. A few adjunct faculty had not responded and did not teach in Spring 2022.

Budget

Academic Affairs and others have solicited feedback on budget requests to matchup requests with what is available; emergencies are being assessed along with areas where expenditures can be put off for a year. Requests being reviewed over several meetings. The preliminary budget will be brought to the Board for approval around June.

- **Question** on graduate student stipend increases being considered; Mines' minimum graduate student stipend is \$27,000 and may change depending on resources, some departments provide more than this. Departments are provided a sum of money for teaching assistants; departments can decide to hire one or two less to cover the needs of TAs and raise the stipend to remain competitive. Long-term plan to raise graduate stipends over the next three to four years; Holz noted the current inflation rate was unexpected. The Board of Trustees will need to approve the minimum stipend, number may fluctuate.

Registrar's Office

Paul Myskiw

Add/Drop Dates

A recommendation to change the add date was brought to Undergraduate Council, Graduate Council, and the Provost. The add date would be shortened to Monday following the first week of the semester, the drop date would remain as Census Day. Mines allows students 16-17 days to add courses; faculty experienced disruption in some courses where students joined the class later in the semester. The add/drop date is not listed in the Catalog, discussion began on who owns these dates and if it is a policy or procedural change. Myskiw reported that each institution can create their own add/drop dates, the date is not designated at the state level.

Discussion between the deans, Provost, and Registrar on more broadly utilizing waitlists in Banner to assist students in graduation requirements. Myskiw noted faculty desire to match the add date with the waitlist expiration. Departments encouraged to use the automatic waitlist functionality.

- **Question** on students registered for one section adding themselves to multiple sections of the same class; Myskiw confirmed students can place themselves on multiple sections. The advantage of having waitlists expire 24 hours after seats are open forces students to decide.

Senator raised concern about faculty being unsure of the number of seats needed for a course. The Registrar's Office has a feature for Fall that allows faculty to pull seats needed through the degree audit; the Registrar's Office can then send reports to departments on seats needed and increase prediction abilities. Incoming freshman seats would remain unknown due to AP scores released in July.

Approval of Minutes – February 22, 2022

Sebnem Duzgun

MOTION: To approve the Faculty Senate minutes of February 22, 2022 by Horan, seconded by King. Motion passed unanimously.

E&I Activities

Werner Kuhr

Kuhr provided background on the motivation for E&I and provided information on Mines' graduates entrepreneurial endeavors. Eleven percent of 30,000 alumni take a managerial position; Mines

graduates achieve well and move forward within the business community. Kuhr noted that less than half a percent of students 0-5 years after graduating are in the business community; more than 25% of students are in business 20-30 years out of school. E&I provides students the skillset to excel after graduation.

E&I is not centralized within one department and remains inclusive to educate students in the basic process of entrepreneurial thinking and practice; E&I can instill the possibility of entrepreneurial activities at school and provide the basis for any managerial position.

The program heavily involves alumni. Kuhr reached out to 200-250 alumni where 200 accepted the invitation to return and give back to Mines. E&I collaborates with any department or program and provides a supportive and always growing ecosystem through learning experiences and coursework, collaborative opportunities with alumni and companies, and pitch competitions. Resources now available include the McNeil Innovation Classroom Space centered around teams, the Labriola Innovation Complex where construction has begun and is expected late 2022 or early 2023, and the Beck Venture Center with the expectation to be a business incubator and accelerator. All resources made possible through alumni and donors. Kuhr thanked founding donors Charles McNeil, Thomas Nicholoff, Frank and Mary Labriola, and Mike and Kelly Beck. E&I has hired an interim director for the Beck Venture Center.

Kuhr outlined current and planned academic programs alongside the associate director, Sid Saleh. Programs will be available in most disciplines and will provide students with hands-on work. E&I to work on outreach for strategic partners.

Kuhr noted students are limited in time due to academics and E&I sought to diversify through external and internal activities, extracurricular events, and concepts inside of existing courses.

- **Question** on what will be in Labriola; Kuhr explained the 20,000 square foot building will house machining, woodworking, and software development alongside a 10,000 square foot space for teams to meet and interact. Some usages from Brown will be moved there to open areas within Brown.

Tenure Track Junior Faculty COVID Effects

Mike McGuirk

McGuirk provided overview of concerns from tenure track junior faculty affected by COVID. Several research active junior faculty have experienced damage due to loss of funds and momentum caused by COVID; noted the one-year tenure pause provided was beneficial but insufficient in offsetting the effects.

Attempts made to go through informal avenues with department heads and deans and were provided with an indiscriminate funding approach that may not work for all afflicted. Document was provided to Faculty Senate outlining anecdotes from faculty on what was experienced. Effects vary depending on stage of career and time of employment. McGuirk outlined a goal provided by efforts completed by other universities to propose an internal proposal system where affected junior faculty can join.

Senator commented on the effects of COVID with senior faculty and a fairness issue may be raised targeting only junior faculty. McGuirk noted there being a strong belief that careers may be destroyed due to the pandemic and junior faculty struggle to find external funding; a safety net may be beneficial.

- **Question** on needing money specifically and if additional time would be of benefit; McGuirk noted the one-year extension was appreciated but was not beneficial with the loss of funds.
- **Question** on other options to consider such as not counting the COVID year; McGuirk noted Virginia Techs' method of shifting expectations of tenure. Startup funds are important, several noted without external funding for research and results additional pauses or years added would not assist.

Senator commented on the use of an internal grant and money needing to come from somewhere; McGuirk commented on the money provided to junior faculty from the university and the loss of these faculty causing financial strain. Several junior faculty were surveyed, some noted starters running down and the probability of quitting; others in the survey noted lack of funds by Summer 2022.

Faculty Senate suggested working with junior faculty in an ad hoc committee to address the concerns and look for a means of aiding junior faculty. Comment made on further analysis of Virginia Techs' recommendation and how it may be applied to Mines. Senate support could not be financial. Suggestion made to frame this as a loss of revenue for the university and assisting would benefit the university and junior faculty careers.

Senator suggested the topic be brought to Research Council, as well.

MOTION: To approve the formation of an ad hoc committee to address the concerns brought to Senate regarding the FS by King, seconded by Dugan. Motion passed unanimously.

The ad hoc committee was suggested to address the concerns, develop a recommendation, and bring the resolution to administration.

Note: Duzgun exited the meeting and transferred the remainder of the Faculty Senate items to Horan.

Childcare Discussion

Joe Horan

Faculty brought concerns regarding childcare at several levels to Senate; faculty had noted the decision of the mask mandate may have been done without consideration of impacts on faculty with children who are unable to receive the vaccine, are immunocompromised; and parents, particularly women, with small children are impacted by COVID. Study done by the American Geoscience Institute in 2021 reported nearly 47% of geoscientists had reported continuing negative impacts on professional activity, 25% reported the need to decrease work hours due to caregiving responsibilities.

Comment made on lack of childcare facility and its necessity; Senate requested information on the childcare facilities slower process. Graduate Student Government would support a resolution on the necessity for the childcare facility.

Concerned faculty noted Mines frequent comparison to the University of Colorado and provided examples of what CU had done to support faculty including teaching assistant support, reducing service commitments, permitting faculty with caregiving demands to defer service, making pandemic impacts a standard component of annual FDR writing as well as tenure dossiers.

Senator noted the benefit of acknowledgement of COVID impacts, not in a negative light but as understanding, on evaluations. Faculty encouraged to work with department heads; Senator noted the need for a more formalized process.

MOTION: To establish an ad hoc committee to form a statement/recommendation on the need to establish childcare at Mines by King, seconded by Karaivanov. Motion passed unanimously.

Briefings, Informational Items, and Updates

Existing x98 course reports, approval process for permanent course numbers

Tabled.

Undergraduate Council

Jeff King

Approved Undergraduate Council course changes and new courses listed at the end of this agenda.

Program(s) for Vote – presented to Senate 2/22/22

1.1 **CHEMICAL & BIOLOGICAL ENGINEERING**

[CIM 12/7; GC 2/9]

1 program change: BS-CHE: BS in Chemical Engineering

In the current Catalog, double-counting of the four core courses required for the combined BS/MS program is not allowed. This causes unnecessary confusion among students; request to remove this constraint.

MOTION: To approve the program change to Chemical and Biological Engineering in BS-CHE: BS in Chemical Engineering King, seconded by Voelker. Motion passed unanimously.

New Program being presented –

1.2 **CIVIL & ENVIRONMENTAL ENGINEERING**

[CIM 2/16; Provost 2/16]

1 new program: BS-CTRST: Bachelor of Science in Construction Engineering

Marr provided an overview of the CEE department and ABET accreditation.

The curriculum development process included analysis across existing programs for commonalities, alignment with ABET program criteria, alignment with the Fundamentals of Engineering Exam, and building on to the CEE Signature Student Experience (SSE). The proposed curriculum is the same as Civil Engineering through sophomore Fall semester; six new proposed courses distributed through junior and senior years with addition of technical electives. The new program is expected to align with SSE by being more interactive and experimental with project-based learning, field experiences; and industry engagement including guest lectures, field visits, projects, and internships.

Marr noted needed resources for the program: professor of practice, T/TT faculty, and TAs/graders for courses. The professor of practice search is underway and would be responsible for the development and delivery of construction courses and solicit internship and course project opportunities. The T/TT faculty would oversee the program and lead continual curriculum development and ABET assessment.

Comment made on a few minor errors in MATH prerequisites.

Program(s) being presented – for vote 3/22/22

1.3

GEOPHYSICS

[CIM 12/21; UGC 2/23]

1 program change: BS-GPE: BS in Geophysical Engineering
Recent student feedback indicates that the current single-semester Applied Geophysics course is insufficient to cover applied geophysics methods in the necessary depth. To better prepare the students for their future careers and prepare them for the geophysics summer camp, we propose to extend the Applied Geophysics to two-semester courses: GPGN318 Applied Geophysics I and GPGN319 Applied Geophysics II. The two courses will be offered synchronically with the two other current courses, GPGN 328 Physics of the Earth I and GPGN329 Physics of the Earth II, with one series (328/329) focusing on theories and the other (318/319) focusing on applications. Removal of GPGN350.

Graduate Council

Tina Voelker

Graduate Council approved course changes and new courses listed at the end of this agenda.

Informational Item –

2.1

MECHANICAL ENGINEERING

Program Suspension: XCR-ADVMO: Graduate Certificate – Smart Manufacturing

Program was previously up for deactivation; offline discussion concluded program suspension would be best for the program should it be renewed in the future.

Program(s) for Vote – presented to Senate 2/22/22

2.2

CHEMICAL & BIOLOGICAL ENGINEERING

[CIM 1/7; Provost 1/7; GC 2/16]

1 new program: XCRTG-CEPET: Chemical Engineering Processes in Energy Transitions

2.3

ECONOMICS AND BUSINESS

[CIM 1/27; GC 2/16]

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

In the "Further Degree Requirements", replaced the Economic Evaluation Workshop with an Introductory Python Programming Workshop to better prepare students for using Python in quantitative classes. In addition, the material that was covered in the Economic Evaluation Workshop will be reviewed in the core class - EBG540 Accounting and Finance. Also added EBG565 Marketing for Technology-Based Companies back to the Technology Management and Innovation Course list.

2.4

ENGINEERING, DESIGN, AND SOCIETY

[CIM 2/3; GC 2/16]

1 program change: MSCR-HES: Humanitarian Engineering and Science
Currently not able to provide all interested prospective students with graduate coursework that reflects their professional development goals. Proposing a broader array of "track" options for students who do not easily fit with existing offerings. Proposed revisions to:

1. Add a disciplinary track in Humanitarian Robotics
2. Add a disciplinary track in Data Science
3. Add an interdisciplinary track
4. Modify electives
5. Modify courses for geophysics disciplinary track
6. Modify courses for environmental engineering track

2.5 **QUANTITATIVE BIOSCIENCES AND ENGINEERING**

[CIM 2/2; GC 2/16]

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

Updating program to:

-add in new courses, BIOL 501, Advanced Chemistry, and BIOL 590, QBE Graduate Seminar

-update BIOL 500

-update course electives

-remove Independent Study as a core course for the MSNT program

-update language

2.6 **GEOPHYSICS**

[CIM 2/1; GC 2/16 (Consent Agenda)]

1 program change: XCRTG-CCUS: Carbon Capture, Utilization, and Storage
Revision made to bring clarity to wording around courses, no changes to the actual program.

MOTION: To the program changes listed in items 2.2 through 2.6 in an omnibus Faculty Senate vote by Voelker, seconded by King. Motion passed unanimously.

Program(s) being presented – for vote 4/12/22

2.7 **MECHANICAL ENGINEERING**

[CIM 2/1; GC 3/2]

1 program change: CERTMS-ADVMAN: CERT & MS – Additive Manufacturing
Changing the name of the MSNT program to Additive Manufacturing as recommended by advisory committee and in keeping with student feedback and interest.

Revising the MSNT Core Courses to reflect the focus on Additive Manufacturing.

2.8 **PETROLEUM ENGINEERING**

[CIM 1/31; GC 3/2]

1 program deactivation: MP-PMPRS: Professional Masters in Petroleum Reservoir Systems

The Professional Masters in Petroleum Reservoir Systems is recommended to be sunsetted. The program has attracted low applicant numbers primarily because the Petroleum industry does not generally support the Professional Masters degree. Also, while the Professional Masters program was intended for working professionals, many of the applicants are not employed and those who enroll generally want to convert to a

thesis-based MS once they begin the program. Due to the low enrollment in the program, the required classes draw low registration.

The participating departments, Geology and Geological Engineering, Geophysics and Petroleum Engineering are all in agreement on the sun-setting of the program. Currently enrolled students (4) will be supported until the completion of their program.

- 2.9 **MINING ENGINEERING**
[CIM 2/17; GC 3/2 (Consent Agenda)]
1 program change: MP-MEM: MP – Mining Engineering and Management
Minor cosmetic changes to the program language.
- 2.10 **ELECTRICAL ENGINEERING**
[CIM 2/18; GC 3/2 (Consent Agenda)]
1 program change: MSPHD-EE: MS & PhD – Electrical Engineering
Updated the “EPSE” track name to “PES” (Power and Energy Systems).

Adjourn

Joseph Horan

Meeting adjourned: 4:03 pm.
Next meeting: April 12, 2:00-4:00 pm via Zoom.

Undergraduate Council approved course changes

GEGN330: Geoscientists Thermodynamics – *Removal of GEGN206 prerequisite*
GEOL314: Stratigraphy – *Removal of prerequisites GEGN203, GEGN204, and GEGN205. Added prerequisites GEGN212 and GEGN217*
GEOL321: Mineralogy and Mineral Characterization – *Removal of prerequisite GEGN206 and addition of GEGN212*

Undergraduate Council approved new course

PHGN460: Elements of Modern Optics
GPGN318: Applied Geophysics I
GPGN319: Applied Geophysics II
EBGN307: Business Communications
EBGN308: Principles of Marketing
MNGN318: Statics and Dynamics Combined for MN

Undergraduate Council approved course deactivations

GPGN314: Applied Geophysics

Graduate Council approved course changes

GEOL558: Earth Resource Data Science 2: Applications and Machine-Learning – *Added prerequisites GEOL557 and DSCI403/CSCI303*
GEOL513: Hydrothermal Geochemistry – *Added prerequisites GEGN401 or GEOL524*
GEOL517: Field Methods for Economic Geology – *Update to course description and addition of prerequisites GEGN401 or GEOL524*

GPGN590: Instrumental Design in Applied Geosciences – *Change to course title, description, and addition of prerequisite CSCI250 or instructor permission*

MATH510: Ordinary Differential Equations and Dynamical Systems – *Addition of prerequisite MATH301*

EBGN563: Management of Technology and Innovation – *Title change and updated course description*

BIOL500: Cell Biology and Biochemistry – *Updated course information to include lab section and increased to four (4) credits*

MNGN510: Fundamentals of Mining and Mineral Resource Development – *Updating prerequisites to MATH111/112 or equivalent*

CEEN540: Advanced Design of Steel Structures - *Update to course offering date (listed incorrectly in the Catalog description)*

CEEN541: Design of Reinforced Concrete Structures II - *Update to course offering date (listed incorrectly in the Catalog description)*

CEEN542: Timber and Masonry Design - *Update to course offering date (listed incorrectly in the Catalog description)*

CEEN545: Steel Bridge Design - *Update to course offering date (listed incorrectly in the Catalog description)*

CEEN547: Design of Prestressed Concrete Structures - *Update to course offering date (listed incorrectly in the Catalog description)*

EENG509: Sparse Signal Processing – *Course description update, addition of prerequisites EENG411 and EENG515 or instructor consent*

EENG515: Mathematical Models for Signals and Systems – *Course description update*

EENG571: Modern Adjustable Speed Electric Drives – *Course offering updated*

EENG572: Renewable Energy and Distributed Generation - *Course offering updated*

EENG577: Advanced Electrical Machine Dynamics for Smart-Grid Systems - *Course offering updated*

EENG580: Power Distribution Systems Engineering - *Course offering updated*

EENG582: High Voltage AC and DC Power Transmission - *Course offering updated*

EENG587: Power Systems Protection and Relaying - *Course offering updated*

EENG588: Energy Policy, Restructuring and Deregulation of Electricity Market - *Course offering updated*

MEGN511: Fatigue and Fracture – *Added online modality for Spring 2023*

MEGN515: Computational Mechanics - *Added online modality for Spring 2023*

MEGN566: Combustion - *Added online modality for Spring 2023*

MNGN551: Mine Accounting – *Changes to course description and grammar edits*

MNGN554: Mine Finance – *Changes to course description and grammar edits*

SPRS501: Space Resources Fundamentals – *Course offering added to course description*

SPRS502: Space Systems Engineering - *Course offering added to course description*

SPRS504: Economics of Space Resources - *Course offering added to course description*

SPRS505: Space Operations - *Course offering added to course description*

SPRS506: International Space Law & Policy - *Course offering added to course description*

SPRS507: Advanced Planetary Geology - *Course offering added to course description*

SPRS591: Space Resources Project I - *Course offering added to course description*

SPRS592: Space Resources Project II- *Course offering added to course description*

SYGN588: GIS-Based Real World Learning Project I – Fundamentals – *Course name change*

Graduate Council approved new courses

PHGN581: Laser Physics

GPGN545: Introduction to Distributed Fiber-Optic Sensing and Its Applications

PEGN518: Advanced Production Engineering

SYGN590: GIS-Based Real World Learning Project II – Advanced Applications

Graduate Council approved course deactivations

CEEN571L: Advanced Water Treatment Engineering and Water Reuse – Laboratory

CEEN575L: Hazardous Waste Site Remediation: Treatability Testing

CEEN576: Pollution Prevention: Fundamentals and Practice