

Colorado School of Mines – UNDERGRADUATE COUNCIL MEETING MINUTES
February 22, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 19 total (10 needed for quorum). Quorum was present.

P	Joseph Horan (chair)	P	Andrew Pederson (EB)	P	Mike Nicholas (AMS)	P	*Tim Ohno (PH) proxy for Chuck Stone (PH)
P	Michael Barankin (CBE)	P	Cortney Holles (HASS)	A	Corinne Packard (MME)	P	Nicole Smith (MN)
P	Dylan Domaille (CH)	P	Ge Jin (GP)	P	Rob Thompson (CS)	P	Dave Benson (GE)
P	Linda Battalora (PE)	P	Hongyan Liu (CEE)	P	Oyvind Nilsen (ME)	P	Emmelia Ashton (USG)
P	Chelsea Salinas (EDS)	P	Brianna Buljung (LB)	P	Hisham Sager (EE)		

Other Regular Attendees and Guests

A	Sam Spiegel (Mines Online)	P	Dixie Cirillo (PA)	P	Mara Green (AA)	A	Kendra Stansbury (RO)
A	Karla Perez-Velez (CASA)	P	Vibhuti Dave (UGS)	A	Deb Jordan (Trefny Center)	P	Paul Myskiw (RO)
P	Katie Ludwin (CASA)	P	Danielle Boileau (CASA)	A	Cheryl Medford (GE)	A	Rachel McDonald (PE)
P	D. Scott Heath (RO)	P	Colin Terry (SL)				

Special Guest(s): Josh O'Brien (Writing Center), Derek Morgan (SL), Gerald Bourne (MME)

Welcome

Joe Horan

Approval of Minutes – February 15, 2023

Joe Horan

MOTION: To approve the Undergraduate Council minutes of February 15, 2023 by Barankin, seconded by Nilsen. Motion passed unanimously.

Curriculum Item(s) for Vote – from 2/1/23 and 2/8/23

1.1 APPLIED MATHEMATICS & STATISTICS

Mike Nicholas

[CIM 1/26]

1 course change: MATH332: LINEAR ALGEBRA

CS requested we revisit the prerequisites of this class. We did and decided that we could loosen the prereqs from Calc III to Calc II/Phys 1 (students need vectors for linear algebra).

MOTION: To approve the course change to MATH332: Linear Algebra by Nicholas, seconded by Jin. Motion passed unanimously.

1.2 ELECTRICAL ENGINEERING

Hisham Sager

[CIM 2/21]

1 program change: BS-EE: BS in Electrical Engineering

An analysis of the emphasis areas within the department reveals that approximately 70% of our students do not select an emphasis area and instead pursue our general electrical engineering program. Supporting these emphasis areas places a high teaching

Registrar's Office

Paul Myskiw

The Registrar's Office confirmed having received the four-year plans from departments. Fall 2022 freshman class, by major, to be used to project seats for Fall 2023. Fall 2023 class size is expected to be the same alongside distribution of majors. The RO will look at the whole first year, spring and fall, by major. RO recognized limited seating for large core courses. Should the core changes pass, references of CSCI101 and CSCI102 would be replaced with the new CSCI128 course.

Student Life – Core Curriculum

Colin Terry

2.1 **CSM GENERAL**

[CIM 2/16]

1 course change: CSM201: TRANSFER STUDENT SUCCESS SEMINAR
Credit changed to 1.0.

2.1.1 [CIM 2/20; Provost 2/20]

1 new course: CSM202: STUDENT WELLNESS AND WELL-BEING

Student health and wellness issues continue to present challenges for colleges and Mines is taking additional steps to educate and prepare students to address these challenges. One effort, as part of a larger Every Oredigger Initiative, is the proposed addition of a 1.0 credit course that would be required for all students to complete early in their college carrier. The information below provides some preliminary details on the course content, structure, assignments, and outcomes.

Terry asked Council to consider the four memorandums presented and put forward for the Success and Wellness core curriculum changes. The four memorandums outlined credit changes of half to one credit for PAGN courses, removal of PAGN101 and PAGN102, credit changes to CSM101 and 102, introduction of the new CSM202 course, and introduction of the Success and Wellness category including CSM202 as a required course.

Terry reported any courses that would be proposed to fill the remaining three credits for the S&W category would be brought forward to Council. CSM102 has been approved, but it would need to be brought to Council and Faculty Senate to be added to the list of courses qualifying to satisfy the third S&W credit.

Dave provided a description for courses that may count toward the S&W curriculum category:

“Courses in this category facilitate personal growth and encourage a balanced and healthy campus lifestyle. Success and wellness courses are applied, experiential courses that impart foundational practical, lifelong skills or competencies to the benefit of a student's future scholastic efforts and/or personal and professional aspirations.”

Council agreed for additional time to review the CIM submission of CSM202 and distribute the memorandums to departments.

New Curriculum Item(s)

3.1 **METALLURGICAL & MATERIALS ENGINEERING**

[CIM 2/16]

Gerald R. Bourne

1 program change: BS-CERE: Ceramic Engineering
Changes reflect adaptation to new core requirements.

3.1.1 [CIM 2/17]

1 program change: BS-MME: BS in Metallurgical and Materials Engineering
Program grid changes to reflect updates in response to core changes.

3.1.2 [CIM 2/17]

6 course changes: MTGN319: INTRODUCTION TO GLASS SCIENCE AND TECHNOLOGY

Correct oversight- this course will be increased by one credit to reflect more in-depth coverage compared to the existing elective.

Course had been entered into CIM with two credits plus one credit for lab. The department would like to keep the two-degree programs parallel in the beginning and the instructor developing the course agreed that enough content can be added to the lecture.

MTGN334: CHEMICAL PROCESSING OF MATERIALS

EDNS251 no longer required in our curriculum.

The prerequisite was in place to keep students on track with EDS and not postponing until later in their academic career.

MTGN445: MECHANICAL PROPERTIES OF MATERIALS

Adding prerequisites that used to be implicit to ensure proper sequencing. MTGN348 and CEEN241 and CEEN311.

Department would like to add Statics and Mechanics of Materials, which are already required in the program. The two courses would better prepare students for MTGN445 and keep students on track so the courses are not delayed once students are taking upper division studies.

MTGN465: MECHANICAL PROPERTIES OF CERAMICS

Update to course prerequisites. MTGN310, CEEN241 and CEEN311.

Originally, MTGN314 was the prerequisite. MTGN314 was then changed to MTGN310.

MTGN467: MATERIALS DESIGN: SYNTHESIS,
CHARACTERIZATION AND SELECTION

MTGN468: MATERIALS DESIGN: SYNTHESIS,
CHARACTERIZATION AND SELECTION

Change to offered both semesters to support ahead of sequence students. Change of prerequisites to give appropriate in-major sequencing and makes prereqs compatible with both departmental degree programs.

3.1.3 [CIM 2/16; Provost 2/16]

1 new course: MTGN457: SOLIDIFICATION

Very few institutions offer solidification at the undergraduate level. By offering this course, Mines will be top of mind for students interested in pursuing casting, welding,

where students learned programming using Matlab. Matlab was only serving the information systems. Faculty found the one credit could be done independently to serve different classes by having a general introduction to Matlab instead of focusing on a fixed subject.

The one credit would move to a field session. The course material of EENG310 would not change.

- **Question** if the EENG310 would be a prerequisite to the field session with moving the one credit into the field session; Sager reported the two courses would be co-requisites of one another.
- **Question** if the changes to the credit hours effect students' graduation time or if there is an increase or decrease; Sager reported the EENG310 one credit recitation was moved into EENG391. Sager to confirm credit changes within the degree.

EENG340: COOPERATIVE EDUCATION

Moving from A-F to pass/fail.

EENG350: SYSTEMS EXPLORATION AND ENGINEERING LAB

*Project involves a variety of sub-systems beyond control and embedded systems
EENG350 (SEED Lab) is a required course in the Electrical Engineering undergraduate curriculum. Currently, EENG 350 is offered every semester as a 2-credit hour course. This is an open-ended design lab.*

Discussion with students and faculty have revealed that the workload is heavy for many students, by the standards of a 2-hour course.

Moreover, the current arrangement presents some staffing issues (related to assigning faculty loads) and scheduling challenges to course delivery in Electrical Engineering.

This proposal is to increase the credit hours for EENG (SEED Lab) from 2 credit hours to 3 credit hours. Faculty will ensure the workload is commensurate with a 3 credit-hour course.

Faculty noticed students were putting in additional efforts outside of the lab. The class was proposed to increase from two to three credits due to learning and material.

EENG385: ELECTRONIC DEVICES AND CIRCUITS

The course description was incomplete and missing two important topics; opamps and frequency response. These are standard topics included in a devices class - for example, see the text by Sedra and Smith. In fact, the EENG 307 prerequisite is required precisely because students need to be familiar with the concepts of frequency response prior to taking the class. This update was long overdue and will bring the description in line with the actual topics covered in the class.

The course description was updated to reflect what is used in the industry today. The course material remains the same.

EENG386: FUNDAMENTALS OF ENGINEERING ELECTROMAGNETICS

Update to course description. Re-structuring all AWC courses to better fit student's education in the Antennas and Wireless Communications area.

EENG391: FE ON COMPUTATIONAL METHODS FOR ELECTRICAL ENGINEERING

We propose to:

Remove the recitation and Matlab assignments from EENG310, reducing it from a 4-hour course to a 3-hour lecture-only course.

Introduce a new one-hour required Field Engineering (FE) course entitled Computational Methods for Electrical Engineering. All EE majors must still complete 2 FE courses; with this one being required, students may select one other from a list of options.

This FE course will be a co-requisite for EENG310 (and vice versa), so students will need to take it concurrently with EENG310. This ensures that students will be prepared for courses such as EENG311 (Information Systems Science II), which has EENG310 as a prerequisite and assumes familiarity with Matlab.

This FE course will draw from the Matlab-focused signal processing curriculum from the former EENG310 recitation, with the addition of Simulink material.

EENG428: COMPUTATIONAL ELECTROMAGNETICS

Update to course description. Re-structuring all AWC courses to better fit student's education in the Antennas and Wireless Communications area.

3.3.1

[CIM 2/20]

1 program change: MINASI-EE: Minor/ASI in Electrical Engineering
Added specifics on what courses are needed to receive a minor.

3.4

GEOPHYSICS

Ge Jin

[CIM 2/16]

1 course change: GPGN409: INVERSION
Prerequisite and co-requisite house cleaning. Minor updates to Catalog description. Removed GPGN229, MATH332, CSCI250 from prerequisites; updated to GPGN329, GPGN404. Removed GPGN435 co-requisite.

The course change was with co-requisite and prerequisite house cleaning within the department. Department found some course prerequisites were not honoring the chain rule and were not reflected in order. The cleanup shows fewer prerequisites to follow the chain of expected courses.

3.4.1

[CIM 2/17]

3 course deactivations: GPGN350: SCIENCE AND COMMUNICATION SKILLS
Course no longer part of undergraduate curriculum and had last been taught Fall 2021.
GPGN419: INTRODUCTION TO FORMATION EVALUATION AND WELL LOGGING
This course is no longer offered in the GP undergraduate curriculum. Petroleum offers PEGN 419, which was equivalent to GPGN 419 in the past and will remain as an elective for our undergraduate students to select.

GPGN435: GEOPHYSICAL COMPUTING

GPGN435 is a duplicate course of GPGN436, GPGN435 was offered one time to students in Fall 2019. GPGN436 is the current class being offered by the GP department.

3.5

PETROLEUM ENGINEERING

Linda Battalora

[CIM 2/22]

3 program changes: BS-PTE: BS in Petroleum Engineering
Changes to the PE Major to incorporate the changes in core curriculum. Highlights include removing two PEGN courses, moving around several core curriculum and elective courses, and bring the total required credits down to 131.

Several core curriculum courses were moved around to even out student course loads over the different terms and minimize bottlenecks to prerequisite requirements. Summer field sessions were not affected. The total credits have been reduced from 137.5 to 131.

PHGN100 and PHGN200 were reduced from 4.5 to 4.0 credits, CEEN311 and MATH225 were moved to the third-year fall term from second year fall term, HASS200 was moved from the third-year fall term to second year spring term, PEGN305 was removed as CSCI128 covers similar content, the free elective was moved to fourth year fall term. In the fourth year PEGN414 was removed due to redundant materials being moved to other courses and reducing overall program credits. The spring term free elective was changed to a H&SS mid-level course elective.

MIN-PTDA: Minor in Petroleum Data Analytics

Updating the PE Data Analytics minor to reflect removing PEGN305 from the PE major required courses and the discontinuation of courses in other departments that were part of the minor.

Advisor has been updated, J. Crompton retiring. S. Kamrava taking on as program advisor.

EBGN courses have been removed from the list of technical electives. MATH332: Linear Algebra had also been removed from the technical electives list. PEGN305, a two-credit course, is no longer required for the PE major so CSCI128 has replaced it.

- **Question** on why linear algebra had been removed from the technical electives list; department found students did not want to take the course and other courses are available within the electives more relevant to the major.

MINASI-PE: Minor in Petroleum Engineering

Updating the PE minor to simplify it and make more accessible to students from other majors.

The minor has two foci: operations and reservoir. To make the minor accessible to more students, PE proposed removal of the two foci to a more general minor option. Battalora noted this was like the minor templates of GP and GE.

Two required courses are now available for the minor. The remaining twelve credits can be any combination of PEGN courses.

Continuing Curriculum Item(s) – from 2/15/23

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| 4.1 | CHEMICAL & BIOLOGICAL ENGINEERING
[CIM 2/13]
1 program change: BS-CHE: BS in Chemical Engineering
<i>Updating program requirements in accordance with core revision.</i> | Michael Barankin |
| 4.2 | GEOPHYSICS
[CIM 2/13]
1 program change: BS-GPE: BS in Geophysical Engineering | Ge Jin |

The GP department conducted an update on core courses to fit the campus-wide adjustment.

The department also proposes the addition of six tracks that would guide our undergraduate students in their course selection and career development. This is an approach that has been adopted by various other programs, such as Mechanical Engineering.

4.2.1

[CIM 2/8]

2 course deactivations: GPGN340: COOPERATIVE EDUCATION
GPGN471: GEODYNAMICS AND GEOLOGY

No longer offered or not currently offered.

4.3

MECHANICAL ENGINEERING

Oyvind Nilsen

[CIM 2/7]

1 course change: MEGN412: ADVANCED MECHANICS OF MATERIALS

Added online modality for course.

4.4

MINING ENGINEERING

Nicole Smith

[CIM 2/7]

1 course change: MNGN444: EXPLOSIVES ENGINEERING II

The instructor needs to verify the qualifications of incoming students to this course since the course involves handling explosives and it requires safety procedures and competency of students in handling of explosives. The proposed changes include adding the minimum grade of C for MNGN333 as a prerequisite for this course.

Adjourn

Joe Horan

Meeting adjourned: 5:01 pm.

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