

Colorado School of Mines – UNDERGRADUATE COUNCIL MEETING MINUTES
 March 1, 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	Chuck Stone (PH)
P	Michael Barankin (CBE)	P	Cortney Holles (HASS)	P	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	*Shiling Pei (CEE) proxy for Hongyan Liu (CEE)	P	Oyvind Nilsen (ME)	P	*Cooper Eisman (USG) proxy or Emmelia Ashton (USG)
P	*Marie Stettler Kleine (EDS) proxy for Chelsea Salinas (EDS)	P	*Seth Vuletich (LB) proxy for 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)	P	Deb Jordan (Trefny Center)	A	Paul Myskiw (RO)
A	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): Derek Morgan (SL)

Welcome

Joe Horan

Approval of Minutes – February 22, 2023

Joe Horan

MOTION: To approve the Undergraduate Council minutes of February 22, 2023 by Barankin, seconded by Nilsen. Motion passed unanimously.

Curriculum Item(s) for Vote – from 2/15/23

1.1 **CHEMICAL & BIOLOGICAL ENGINEERING** Michael Barankin

[CIM 2/13]

1 program change: BS-CHE: BS in Chemical Engineering
Updating program requirements in accordance with core revision.

MOTION: To approve the program change to BS-CHE: BS in Chemical Engineering by Barankin, seconded by Vuletich. Motion passed unanimously.

1.2 **GEOPHYSICS** Ge Jin

[CIM 2/13]

1 program change: BS-GPE: BS in Geophysical Engineering
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.

MOTION: To approve the program change to BS-GPE: BS in Geophysical Engineering by Nilsen, seconded by Barankin. Motion passed unanimously.

1.2.1 [CIM 2/8]

2 course deactivations: GPGN340: COOPERATIVE EDUCATION
GPGN471: GEODYNAMICS AND GEOLOGY
No longer offered or not currently offered.

MOTION: To approve the two (2) course deactivations in item 1.2.1 in an omnibus Council vote by Barankin, seconded by Nilsen. Motion passed unanimously.

1.3

MECHANICAL ENGINEERING
[CIM 2/7]

Oyvind Nilsen

1 course change: MEGN412: ADVANCED MECHANICS OF MATERIALS
Added online modality for course.

Horan had asked Faculty Senate President Jeff King regarding Council approval of modality changes. King recommended voting on the change presented.

MOTION: To approve the course change to MEGN412: Advanced Mechanics of Materials by Nilsen, seconded by Barankin. Motion passed unanimously.

1.4

MINING ENGINEERING
[CIM 2/7]

Nicole Smith

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.

- **Question** if the course prerequisite is required for the minor; Smith noted the course is the only explosives course offered and both MNGN333 and MNGN444 are required. Only the grade of C is being added rather than a new prerequisite.

MOTION: To approve the course change to MNGN444: Explosives Engineering II by Smith, seconded by Packard. Motion passed unanimously.

Briefings and Information Items

Office of Undergraduate Studies

Vibhuti Dave

Dave reviewed the Catalog language for the revised core curriculum. The preamble language outlines the purpose and definition of the core curriculum, links to the core competencies, and the list of categories the core courses would fall under: Math, Basic Sciences, & Computing; Design and

Innovation, Humanities, Business, Arts & Social Sciences (Dave noted this name may change as stakeholder departments input is provided); Success and Wellness (S&W), and Student Led Inquiry (this name may change with feedback). A statement was included in the language that every Mines student follows the core curriculum and students are encouraged to do so in accordance with the schedule outlined in their degree program.

A list of courses falling under the core curriculum would be included under each of the five categories.

Within the language, each category is described in detail alongside the definition of the category. Dave noted that some courses listed may change as feedback and input is provided by departments teaching within the core.

An appendix piece was suggested to allow for continued revision of the core based on assessments performed, the new CASES/STFutures course being piloted, and other courses that may be added to the Success and Wellness category.

Sections are included in the language to provide guidelines for incoming and continuing students to have conversations with their advisors and faculty members as the student progresses through the curriculum. If approved, incoming students would complete the core requirements as outlined in the new Catalog. Continuing students may decide to switch to the new Catalog or remain in the Catalog year they were admitted in.

Dave noted there had been discussion if all the guideline details should be entered in the Catalog and if it is a good place to house those details.

- **Question** on what name has been put forward by H&SS leadership for electives; Dave reported the name is "Culture and Society".
- **Question** on why business would not fall under Design & Innovation or the reasoning why all business courses would not be listed in the HBAS section like HASS courses; Dave reported the list of electives is a decision falling on the HASS leadership. Dave reported the Design and Innovation category does not have electives, HASS does.

Councilor noted a committee comprised of HASS, EB, and EDS reviews courses to decide whether the courses count toward the elective credits in the core. The goal of the core courses is to assure students are receiving experience researching, writing, and the skills within humanities and social sciences.

Councilors received the live document to review; Councilors can view it and provide comments to Dave or postpone for further discussion at the 3/8 meeting, if needed.

Green noted the core curriculum language for the Catalog would be entered into CIM in the same way a new program is entered. Council and Faculty Senate would receive notification when the language has been submitted.

Councilor noted that some departments would meet at varying times and may not have enough time to discuss the language. Councilor noted there may not be a meeting the week of Spring Break, cutting discussion down by a week. All curriculum items should be completed for processing by 3/31.

Councilor requested clarification on what would be considered a substantial change to the proposed language; Council agreed that a substantial change to the language would include any change that would negate or change the resolution endorsed by Faculty Senate and Council ([click here to review the resolution](#)).

Registrar's Office

D. Scott Heath

Heath reported summer and fall schedules will be up for view 3/13. Registration will begin the week of 4/3. Heath thanked faculty and departments for submitting surveys on summer enrollment courses. Summer enrollment will be advertised based on submitted surveys.

Student Life – Core Curriculum

Colin Terry

Terry thanked Council for continued discussion and offline questions.

The three items being considered by Council include: changing all PAGN courses from half credit to one credit and everything associated within the PA memorandum, the credit changes to CSM101 and CSM201 identical to the PAGN courses, and the implementation and proposal of CSM202 as a required course.

MOTION: To consider the items presented by Student Life in 2.1 and 2.1.1 for Council vote by Barankin, seconded by Pederson. Sixteen (16) for, two (2) against, one (1) abstention. Motion passed.

2.1

CSM GENERAL

[CIM 2/16]

1 course change: CSM201: TRANSFER STUDENT SUCCESS SEMINAR

Credit changed to 1.0.

- **Question** what the original credit amount was; Terry reported the credit was originally 0.5. CSM101, 201, and all PAGN courses would be shifted from 0.5 to one credit.

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.

MOTION: To approve the items 2.1 and 2.1.1 in an omnibus Council vote by Barankin, seconded by Nilsen. Fifteen (16) for, three (3) against, one (1) abstention.

It was assumed that the PAGN change from half credit to one credit are included in the changes presented by Student Life.

New Curriculum Item(s)

3.1

APPLIED MATHEMATICS & STATISTICS

Mike Nicholas

[CIM 2/27]

1 program change: BS-AMS: BS in Applied Mathematics and Statistics

NOTE: THE FOLLOWING ARE NEW CORE CHANGES: We will drop 3 hours of free elective credit. Not much else will change for us in the new core. I've input a new flow chart (inserting placeholders for the new STF and CSM classes and changing the credit hours of other classes).

At the same time, we will remove MATH530 from the elective lists for the CAM and STAT BS degrees (that is a service course containing material already required in other major classes)

3.1.1

[CIM 2/27]

6 course changes: MATH112: CALCULUS FOR SCIENTISTS AND ENGINEERS II
MATH213: CALCULUS FOR SCIENTISTS AND ENGINEERS III
MATH225: DIFFERENTIAL EQUATIONS
MATH223: CALCULUS FOR SCIENTISTS AND ENGINEERS III HONORS
MATH307: INTRODUCTION TO SCIENTIFIC COMPUTING
MATH332: LINEAR ALGEBRA
MATH334: INTRODUCTION TO PROBABILITY

Adding the new CS course, CSCI128, as a co-req. We would like to take advantage of the intro to programming and to offer support for it in Calc II, Calc III, DiffEQ, Linear Algebra, Scientific Computing, and Probability.

CSCI128 as prerequisite for MATH307, MATH332, and MATH334.

About half of our current incoming class takes Calc I in the Fall, and the other half starts in Calc II or III, so this should be reasonable from a scheduling perspective.

Department found calculus and other courses may benefit from students having basic programming skills and may include future programming assignments, problems, and projects in the courses.

- **Question** if feedback had been received on when the CSCI128 course was being included in course flowcharts, CSCI128 may be problematic placed in spring of sophomore year; Nicholas asked Councilors bring the change back to departments for discussion, noted that CSCI128 should be taken in freshman year as a core course.

Note made that there may not be an ability to accommodate all students to meet at one time with a change of prerequisites. Councilor noted students with credit for Calculus can move to Calculus II, but the addition of CSCI128 as a prerequisite may cause issues with scheduling. Additional note made that there is difficulty in scheduling students with a full fifteen credit load.

Nicholas asked the Registrar's Office to consider implications on scheduling. Heath noted there may be challenges with transfer students and assessing where students fall into the sequence of courses. Note made there may be pressure to get students, especially those transferring the Calc I course, into a computer science course in the first semester.

- **Question** on which courses are seeking CSCI128 as a prerequisite versus co-requisite; Nicholas reported the proposal puts forward CSCI128 as a co-requisite for the core courses of the program and a prerequisite for the 300-level courses.

some told me it was among the most impactful classes they had taken during their time at Mines.

This course also compliments other Mines at 150 goals. HASS lost one of our philosophy professors last year, and our other philosopher is currently department chair. As a result, students with an interest in philosophy have fewer curricular options. Since this course draws heavily upon philosophy, it helps fill this void, and in doing so makes Mines more attractive to students with these interests. Further, the first group of students who took this class reported that they had gotten to know their peers better in this class than in many other classes they taken because they spent so much time discussing questions that were personal, meaningful, and relevant. In this sense, this course also helps create a stronger sense of community among the students.

HASS465 has been piloted.

3.4.1 [CIM 2/27]

1 core course change: HASS100: NATURE AND HUMAN VALUES
Core course change, credits reduced from 4 to 3.

The objectives and course description have been updated to match the reduction in credits.

- **Question** if content was removed from HASS100; Holles reported content is not being removed from the course. Department looking to rearrange content in order to provide the same content in less time, the process was streamlined, including how students work on their final research project and writing. Content may be reorganized around big questions rather than a series of lectures with different distinct topics.

3.5

MECHANICAL ENGINEERING

Oyvind Nilsen

[CIM 2/26]

7 course changes: MEGN200: INTRODUCTION TO MECHANICAL ENGINEERING:
PROGRAMMING AND HARDWARE INTERFACE

Removed one pre-req EDNS151, added HNRS198

MEGN201: INTRODUCTION TO MECHANICAL ENGINEERING:
DESIGN & FABRICATION

Add HNRS105 or HNRS198 are pre-req

MEGN315: DYNAMICS

Add MATH225 as co-req, remove MATH307 as co-req.

MEGN381: MANUFACTURING PROCESSES

Add MEGN212 ad a pre-req (Solid Mechanics)

MEGN417: VEHICLE DYNAMICS & POWERTRAIN SYSTEMS

Remove MEGN361 as prereq. Add MEGN391.

Change from 3 credit hour lecture to 2 credit hour lecture and 1 credit hour studio, to support project-based learning.

MEGN451: AERODYNAMICS

Name change, remove Fluid Mechanics II, keep only "Aerodynamics"

MEGN485: MANUFACTURING OPTIMIZATION WITH NETWORK
MODELS

Add MATH112 as prereq.

- **Question** on why an HNRS course would be listed as a prerequisite for an ME course; question was tabled for 3/8.

- 3.5.1 [CIM 2/27]
1 program change: MIN-AERO: Aerospace Engineering Minor
Added courses to minor.
- 3.6 **PETROLEUM ENGINEERING** Linda Battalora
 [CIM 2/22]
1 course change: PEGN438: PETROLEUM DATA ANALYTICS
We want to add CSCI128 as a pre-req for PEGN438. This will ensure students have the skills need to be successful in this course. As CSCI128 is part of the core curriculum, this will not require additional course credits or create an undue barrier to students taking it
- 3.7 **PHYSICS** Chuck Stone
 [CIM 2/24]
1 program change: BS-PHE: BS in Engineering Physics
These changes will better match our undergraduate Engineering Physics degree with the larger campus changes in our Core Curriculum.
- 3.7 **GEOLOGY & GEOLOGICAL ENGINEERING** Dave Benson
 [CIM 2/24]
1 course change: GEGN307: PETROLOGY
Removing Thermodynamics (GEGN330 or equivalent) as it is being removed from our BS in Geological Engineering. Increasing to 4 CH (from 3) to add a 3rd hour of lecture, allowing content to be delivered more effectively and also to balance out a historic mismatch in defined credit hours between our two tracks.
- 3.8 **GEOPHYSICS** Ge Jin
 [CIM 2/24]
18 course changes: GPGN228: INTRODUCTION TO GEOPHYSICS
Updates made to catalog description; removed topics covered portion and minor updates to the rest of the description.
 GPGN229: MATHEMATICAL GEOPHYSICS
 GPGN268: GEOPHYSICAL DATA ANALYSIS
 GPGN318: APPLIED GEOPHYSICS I
 GPGN319: APPLIED GEOPHYSICS II
 GPGN328: PHYSICS OF THE EARTH – I
 GPGN329: PHYSICS OF THE EARTH – II
 GPGN404: DIGITAL SIGNAL PROCESSING
 GPGN411: GRAVITY AND MAGNETIC METHODS
 GPGN420: ELECTRICAL AND ELECTROMAGNETIC METHODS
 GPGN436: GEOPHYSICAL COMPUTING
 GPGN438: GEOPHYSICS PROJECT DESIGN
 GPGN455: EARTHQUAKE SEISMOLOGY
 GPGN458: SEISMIC INTERPRETATION

4.2 **CIVIL & ENVIRONMENTAL ENGINEERING** Hongyan Liu
[CIM 2/17]
2 course changes: CEEN210: INTRODUCTION TO CIVIL INFRASTRUCTURE
CEEN315: CIVIL AND ENVIRONMENTAL ENGINEERING TOOLS
Credit update from half credits to whole credits.

4.3 **ELECTRICAL ENGINEERING** Hisham Sager
[CIM 2/19]
6 course changes: EENG284: DIGITAL LOGIC
The previous course description focused on outdated technologies and practices. Industry no longer use PLAs, they use instead uses FPGAs. Likewise, we no longer have students wire together TTL logic gates on bread boards. Finally, the focus of the course needs to be on building complex functionality by combining state machines with building blocks.
EENG310: INFORMATION SYSTEMS SCIENCE I
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.
EENG340: COOPERATIVE EDUCATION
Moving from A-F to pass/fail.

- **Question** if the new grading scheme had been brought to Faculty Senate; Horan had not brought the topic to Senate.

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.

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.

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.

4.3.1

[CIM 2/20]

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

4.4

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.

4.4.1

[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.

4.5

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.

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.

MINASI-PE: Minor in Petroleum Engineering

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

New Business

Councilor raised issue that a few internationally sponsored students were exhibiting behavior bordering on harassment due to grades; Councilor unsure of where to direct the issue. Dave noted if the behavior borders on harassment, it should be raised with Derek Morgan's office in Student Life.

Adjourn

Joe Horan

Meeting adjourned: 5:06 pm.

Next meeting: March 8, 4:00-5:00 pm via Zoom. Please send agenda items to Mara Green (mgreen1@mines.edu) one week prior.