

Colorado School of Mines – UNDERGRADUATE COUNCIL MEETING MINUTES
 January 12, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 19 total (11 - majority needed for quorum). Quorum was present

| | | | | | | | |
|---|------------------------|---|-----------------------|---|-----------------------|---|----------------------|
| P | Jeff King (chair) | P | Becky Lafrancois (EB) | P | Mike Nicholas (AMS) | A | Mona El Helbawy (EE) |
| P | Michael Barankin (CBE) | P | Jay Straker (HASS) | P | Corinne Packard (MME) | P | Nicole Smith (MN) |
| P | Dylan Domaille (CH) | P | Ge Jin (GP) | P | Jeff Paone (CS) | P | Bruce Trudgill (GE) |
| P | Linda Battalora (PE) | P | Hongyan Liu (CEE) | P | Oyvind Nilsen (ME) | P | Ethan Lewellin (USG) |
| P | Gyasi Evans (LB) | P | Chelsea Salinas (EDS) | P | Tim Ohno (PH) | | |

Other Regular Attendees and Guests

| | | | | | | | |
|---|--------------------------|---|--------------------|---|---------------------|---|-----------------------|
| A | Fran Aguilar (MS) | P | Dixie Cirillo (PA) | A | Jennie Kenney (AA) | A | Kendra Stansbury (RO) |
| P | Karla Perez-Velez (CASA) | P | Vibhuti Dave (UGS) | P | Mara Green (AA) | P | Paul Myskiw (RO) |
| P | Deb Jordan (Trefny) | A | Josh Ramey (QBE) | A | Cheryl Medford (GE) | P | Terri Snyder (PE) |
| P | Katie Ludwin (CASA) | | | | | | |

Special Guest(s):

Welcome

Jeff King

King welcomed new Councilors Ohno (Physics) and Straker (HASS).

Approval of Minutes – December 8, 2021

Jeff King

MOTION: To approve the Undergraduate Council meeting minutes of December 8, 2021 by Barankin, seconded by Jin. 16 for, 1 abstention. APPROVED.

Briefings and Information Items

Office of Undergraduate Studies

Vibhuti Dave

No updates from the Office of Undergraduate Studies.

Registrar’s Office

Paul Myskiw

Add/Drop Dates

Myskiw reported on waitlist extensions. Over the last four semesters, waitlist purges have been extended. The Spring 2020 waitlist was left through week one with the previous Council having discussed leaving waitlists until the first drop date. Consideration of extended waitlists was discussed; Mines currently offers add and drop dates twelve days into the semester. Mines add date and drop period for full refund is gracious with some institutions only allowing for one week. Myskiw requested Councilor and departmental consideration on the following:

- Should add and drop dates be at the same time? Do these dates need to be the same?
- Is it disruptive to teaching and quality for late add dates in the semester?
- How long should the add/drop period be without disruption to faculty?

Councilors provided anecdotes of disruption of late add dates for courses with early team building. Physical education courses experience students rushing to catch up. Some senior design courses form teams in the first week where late adds are pushed into groups with availability. Late adds cause additional logistical issues including makeup quizzes and assignments in the first two weeks of courses

classes causing some courses to require three to four weeks prior to all students being synced; these efforts are not handled consistently across departments. Additional feedback is needed.

Mines currently allows for eleven business days for adding or dropping courses; other institutions average on five to seven business days. These dates are set by the calendar committee and are not available in the Catalog.

Councilor noted that waitlists should match with drops in the course; students first in line in the waitlist should be added when a student drops the course.

Curriculum Item(s) for Vote – From 11/10/21 Significant Curriculum Changes

1.1 PETROLEUM ENGINEERING [CIM 10/20]

Linda Battalora

1 program change: BS-PTE: BS in Petroleum Engineering
Move free elective (3cr) from Fall Junior to Fall Senior. Move HASS200 (3cr) from Spring Sophomore to Fall Junior. Move PEGN282 (1cr) from Spring Junior to Spring Sophomore. Move PEGN382 (1cr) from Fall Senior to Fall Junior. Move PEGN482 (1cr) from Spring Senior to Spring Junior.

The changes will allow students entering the PE department in spring of Sophomore year to begin the Professional Skills series. It will also allow transfer students to the PE Department to begin adding earlier the Professional Skills courses to their schedules. By moving the series earlier in the program, students will complete the series prior to Senior year, when implementation of professional skills such as technical writing, Capstone design teamwork, team writing, oral communication skills such as presentations and interviews, cover letters, resume writing are required.

MOTION: To approve the program change in Petroleum Engineering BS-PTE: BS in Petroleum Engineering by Battalora, seconded by Jin. 17 for, 1 abstention. APPROVED.

1.2 PHYSICS [CIM 10/14; Provost 10/20]

Chuck Stone

1 new program: MIN-PH: Minor in Physics
Mines Department of Physics encourages the campus to create a Minor in Physics that can follow two different tracks: A Minor in Engineering Physics (Option One) and Minor in Physics (Option Two). By enabling two options, we go from having a minor that no one could complete (due to non-physics prerequisite courses that delayed a student's immersion into physics-rich courses ... which is where we are now) to a minor program that can effectively feature all of our undergraduate courses.

MOTION: To approve the new program in Physics MIN-PH: Minor in Physics by Ohno, seconded by Straker. 18 for, 1 abstention. APPROVED.

Minor Curriculum Changes

The following minor course changes will not be discussed unless specifically requested by Council.

1.3 **CIVIL & ENVIRONMENTAL ENGINEERING**

Lori Tunstall

[CIM 10/27; Provost 10/27]

1 new course: CEEN426: DURABILITY OF CONCRETE

Industry is shifting away from strength-only considerations for concrete design and is moving toward designing for both durability and sustainability as well. This course will prepare students for this inevitable shift in design. As such, it will not only expand the current offerings, but will also support two Mines@150 goals: 1) to be a leader in educating STEM students and professionals and 2) to be an accessible and attractive option for qualified students from all backgrounds.

1.4 **ECONOMICS & BUSINESS**

Becky Lafrancois

[CIM 10/23; Provost 10/24]

1 new course: EBGN496: PAYNE SCHOLARS PROGRAM

This course has been offered as an independent study in Economics and Businesses and the Honors program for the past several years. There are consistently 15-17 students who are enrolled each semester. The class has developed into a more traditional course with clearer objectives, research areas, and interactions between Payne fellows and students. Considering this, the Registrar has requested we no longer complete the Independent Study form and submit, but that the students register through the traditional processes.

MOTION: To approve the curriculum items listed in items 1.3 and 1.4 in an omnibus Council vote by Lafrancois, seconded by Barankin. Motion passed unanimously. APPROVED.

New Curriculum Items

Significant Curriculum Changes

2.1 **CHEMICAL & BIOLOGICAL ENGINEERING**

Michael Barankin

[CIM 12/7]

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. Change request to remove this constraint.

A line was removed from the Combined Baccalaureate/Master's Degree program paragraph that mentioned student inability to double-count courses for the non-thesis masters degree.

2.2 **GEOLOGY & GEOLOGICAL ENGINEERING**

Bruce Trudgill

[CIM 12/2]

3 course changes: GEGN330: GEOSCIENTISITS THERMODYNAMICS

Changes to GEGN330 reflect updates to the BS curriculum in GE agreed upon by the faculty in the Department. The faculty evaluated our program objectives, the sequencing of classes, and the connections among learning outcomes in our 200 and 300- level courses. The outcomes of that analysis include eliminating GEGN 206, incorporating select learning outcomes from GEGN 206 into GEGN 212, adding a new course, GEGN 217, and reducing credits for GEGN 317. Our new curriculum has the same number of total credits as the current curriculum. This proposed change, removing the GEGN 206 pre-requisite, reflects the removal of GEGN 206 from our

curriculum.

GEOL314: STRATIGRAPHY

Changes to GEOL314 reflect updates to the BS curriculum in GE agreed upon by the faculty in the Department. The faculty evaluated our program objectives, the sequencing of classes, and the connections among learning outcomes in our 200 and 300- level courses. The outcomes of that analysis include eliminating GEGN 206, incorporating select learning outcomes from GEGN 206 into GEGN 212, adding a new course, GEGN 217, and reducing credits for GEGN 317. Our new curriculum has the same number of total credits as the current curriculum.

GEOL321: MINERALOGY AND MINERAL CHARACTERIZATION

Changes to GEOL321 reflect updates to the BS curriculum in GE agreed upon by the faculty in the Department. The faculty evaluated our program objectives, the sequencing of classes, and the connections among learning outcomes in our 200 and 300- level courses. The outcomes of that analysis include eliminating GEGN 206, incorporating select learning outcomes from GEGN 206 into GEGN 212, adding a new course, GEGN 217, and reducing credits for GEGN 317. Our new curriculum has the same number of total credits as the current curriculum. This proposed change, removing the GEGN 206 pre-requisite, reflects the removal of GEGN 206 from our curriculum.

Prerequisites for the courses, made internally, have been updated in GEOL314, GEOL330, and GEOL321. GEGN206 has been removed and its learning outcomes added to GEGN212. GEGN217 was added. GEGN317 credits have been reduced. This was designated a significant curriculum change due to the impact courses may have on other departments.

Minor Curriculum Changes –

The following minor course changes will not be discussed unless specifically requested by Council.

2.2.1 GEOLOGY & GEOLOGICAL ENGINEERING

Cheryl Medford

[CIM 12/15; Provost 12/15]

1 new course: GEOL440: PLATE TECTONICS

This is a face to face course for our majors at the undergraduate level. An online graduate level version with different assignments is under construction and will be launched as GEOL598 in Spring 2022. This request is for the undergraduate level course only.

2.2.2 [CIM 12/15]

1 course deactivation: GEOL201: PLATE TECTONICS

This course was added a few years ago before the curriculum was changed. The course does not exist (has not been taught).

2.3 PHYSICS

Chuck Stone

[CIM 12/6; Provost 12/7]

1 new course: PHGN461: ELEMENTS OF MODERN OPTICS

This course is designed to prepare students for a variety of goals including enrollment in advanced optics courses at Mines, graduate research opportunities in physics and other closely-related engineering disciplines, and industrial careers in applied optics. Course topics will provide foundational skills vital to all areas of optics, one of the more rapidly growing areas in Colorado's

Front Range as well as around the nation.

2.4 **COMPUTER SCIENCE**

Jeff Paone

[CIM 12/15]

1 course change: CSCI445: WEB PROGRAMMING

Changing the prerequisite from CSCI262 to CSCI306. Students will learn event-driven programming in CSCI306 which is critical for designing a user interface, which is at the core of web interaction.

This course is an elective course taken largely by CS seniors and juniors. Students are required to take CSCI306 and would have done so by their junior year.

Continuing Curriculum Items – from 12/8/21

Significant Curriculum Changes

3.1 **MECHANICAL ENGINEERING**

Oyvind Nilsen

[CIM 11/17]

2 program changes: BS-MECH: BS in Mechanical Engineering

CHANGE 1 → To allow Mechanical Engineering Students to better select the courses/topics of interest they want and also market them when applying for job, ME plan to implement 4-cours tracks in 8 different topic areas, that will appear on the student's transcripts. The new tracks will each consist of one (1) ME Advanced Engineering Science elective and three (3) approved ME Electives. In summary, the tracks are; Aerospace, Automation & Controls, Automotive, Biomechanics, Energy, Manufacturing, Materials, and Nuclear.

CHANGE 2 → A second change, giving Mechanical Engineering students more choice (after "request" from our Industrial Advisory Board), is to remove EENG Feedback Control from the required course list and replace it with a ME elective. (EEGN will remain a ME elective).

Question raised by Councilor on the removal of Feedback Control as a required course. The Industrial Advisory Committee and Alumni Advisory Committee wanted additional electives for student choices. Students that take the robotics or automation and controls track will take the controls course. The future plan is incorporation of the controls course into the program's advanced engineering science electives that would be a part of the core electives.

3.2 **COMPUTER SCIENCE**

Jeffrey Paone

[CIM 11/29; Provost 11/30]

1 new course: CSCI200: FOUNDATIONAL PROGRAMMING CONCEPTS & DESIGN

Last academic year, CSCI 101 was added as a prerequisite to CSCI 261. This change caused approximately two-thirds of the CSCI 261 material to become redundant and a repeat of the material from CSCI 101 with the only change being the programming language used (C++ instead of Python). By reducing the time spent on the language translation, a significant amount of new content can be introduced into the course.

CSCI 200 and CSCI 261 have less than 40% overlap of content and CSCI 200 is a much more rigorous introduction & application of foundational programming concepts and design. With the combination of CSCI 101 and CSCI 200, students will have a stronger foundation of programming

after two classes as opposed to the current arrangement of needing three classes. Students will be better served with the necessary knowledge to fully succeed in their degree program (CS or otherwise).

This new course is the beginning of a larger CS curricular redesign by better aligning content through the existing CSCI 261-262-306 sequence. We are working towards the common goal of having an introductory programming course in the Mines core for all students.

Minor Curriculum Changes –

The following minor course changes will not be discussed unless specifically requested by Council.

3.3 MECHANICAL ENGINEERING

Oyvind Nilsen

[CIM 11/8]

2 course changes: MEGN330: INTRODUCTION TO BIOMECHANICAL ENGINEERING
MEGN212 added as prerequisite.

MEGN413: AEROSPACE STRUCTURES

This course has been offered as a 498 for the last two years. Course will be an essential part of the Mechanical Engineering Aerospace Minor and aerospace focus areas at CSM. It is also a Mechanical Engineering technical elective.

[CIM 11/9; Provost 11/9]

3.3.1 **1 new course:** ORWE481: 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.

This course was offered as a 498 option in the fall of 2020.

3.4 GEOLOGY & GEOLOGICAL ENGINEERING

Chery Medford

[CIM 11/16]

1 course change: GEGN403: MINERAL EXPLORATION DESIGN

Changing the EDNS 251 prereq to EDNS 264 as this is correct in our Exploration and Engineering flowcharts.

3.5 HUMANITIES, ARTS, AND SOCIAL SCIENCES

Elizabeth Davis

[CIM 11/29]

1 course deactivation: HASS492: ENERGY AND SECURITY POLICY

There is no longer an instructor for this course.

3.6 MINING ENGINEERING

Nicole Smith

[CIM 11/29; Provost 11/29]

7 new courses: MNGN251: METALLURGICAL AND MATERIALS THERMODYNAMICS
New course created for cross listing with MTGN251.

MNGN334: CHEMICAL PROCESSING OF MATERIALS

New course created for cross listing with MTGN334.

MNGN426: HYDRO- AND ELECTRO-METALLURGY

New course created for cross listing with MTGN431.

MNGN430: PHYSICAL CHEMISTRY OF IRON AND STEELMAKING

New course created for cross listing with MTGN430.

MNGN432: PYROMETALLURGY

New course created for cross listing with MTGN432.

MNGN461: TRANSPORT PHENOMENA AND REACTOR DESIGN FOR
METALLURGICAL AND MATERIALS ENGINEERS

New course created for cross listing with MTGN461.

MNGN462: SOLID WASTE MINIMIZATION AND RECYCLING

New course created for cross listing with MTGN462.

MNGN and MTGN course cross-listings have been approved by MT.

Subcommittees Updates

Common Exam and other exam scheduling

Mike Nicholas

A survey was conducted by Lewellin on undergraduate students and removal of common exams; student feedback was split. Faculty would like to retain common exams and believe fifty minutes is an insufficient amount of time for an exam and expressed concern regarding academic misconduct without common exams. Logistic issues and evening times prove inconvenient and evidence was not provided or found regarding common exams and student mental health and safety.

The subcommittee addressed suggestions for continuing common exams with modifications. Two suggestions being: moving common exams into the day and common exams held for larger courses.

The largest classes recorded for Fall 2021 were Chem I, Calc I, Calc III, Phys I, Phys II, and DiffEQ. When registering for the courses a time slot T/Th 8:00-9:15 would be blocked out and largest rooms would not be scheduled during this time in the semester. The largest classes would use this T/Th timeslot for common exams. The largest lecture rooms on campus seat a total of 959 students and some are currently used during the 8am slot; the committee considered the addition of Petroleum Hall, Metals Hall, and Marv Kay and the use of Bunker Auditorium if feasible.

The second largest courses could provide exam scheduling on Fridays with further consideration of morning or evening schedules. Two to three of the courses with over 200 students would need to share Fridays; blocking off a fixed time would cause scheduling issues.

Classes under 200 would be able to use evening exams using Registrar-controlled rooms; the logistics would improve for smaller courses.

Councilor noted that morning exams are more family friendly to students and faculty; Registrar noted that exam times have shifted out thirty minutes with available space being further limited. Increased enrollment is expected for Fall 2023 with 1,300 enrolled students projected. Over enrollment for undergraduate students is due to under enrollment of graduate students.

Stress points logistically include accommodation by the testing center for double or triple time and space being unavailable during the day. Evening times are available but some times are unreasonable for students and faculty.

Committee suggested distribution of these plans to departments for feedback.

Tracks and Emphasis Definitions

Vibhuti Dave

The subcommittee presented at the last Undergraduate Council meeting and is waiting on department

feedback.

Course learning outcomes

No updates from the Course Learning Outcomes subcommittee.

Vibhuti Dave

Miscellaneous / New Business

Consistency in Grading – Subcommittee between UGC and GC
Tabled.

Jeff King

Council Representation

Tabled.

Adjourn

Meeting adjourned: 5:00 pm.

Next meeting: January 26, 4:00-5:00 pm via Zoom.

Jeff King