

Colorado School of Mines – UNDERGRADUATE COUNCIL AGENDA
 April 13, 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	Andrew Pederson (EB)	P	Mike Nicholas (AMS)	P	Mona El Helbawy (EE)
P	Michael Barankin (CBE)	P	Jay Straker (HASS)	A	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)	A	Ethan Lewellin (USG)
P	Gyasi Evans (LB)	A	Chelsea Salinas (EDS)	P	Tim Ohno (PH)	P	*Geoff Brennecka (MME) proxy for Corinne Packard (MME)

Other Regular Attendees and Guests

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

Special Guest(s): Marla Draper (Director of Disability Support Services), Abd Arkadan (EE)

Welcome

Jeff King

Approval of Minutes – March 9, 2022

Jeff King

MOTION: To approve the Undergraduate Council minutes of March 9, 2022 by Barankin, seconded by Jin. 14 for, 1 abstention. Motion passed.

Briefings and Information Items

Office of Undergraduate Studies

Vibhuti Dave

No updates for the Office Undergraduate Studies.

Disability Support Services

Marla Draper

Draper shared guidance on finals; testing center expected to administer around 600+ exams. Exam materials needed from faculty in advance, guidance has been drafted with Dave and Holz and will be administered, once guidance sent faculty encouraged to share within department. Exam copies should be provided three business days prior to the exam schedule for conversion into accessible format, Draper noted the process takes five to eight hours to convert. Draper asked faculty to update the alternative testing agreement section, if needed, to assure final is proctored and administered correctly.

Testing center will not be able to scan and upload finals; asked faculty in Fall 2021 to stop by testing center to pick up exams. Faculty asked to remind students to provide exam request by 4/22.

Faculty asked to share guidance email with adjuncts, graduate students, and others teaching or responsible for monitoring administration of finals. Registrar’s Office to include guidance in student communications, as well.

Registrar’s Office

Paul Myskiw

The Curriculum Inventory Management (CIM) system to transition from 2022-23 to 2023-24 Catalog; short window offered for updates to the CIM form. Councilors asked to provide any feedback or suggested changes.

Councilors asked regarding summer program, E3, and any knowledge associated with it.

Curriculum Item(s) for Vote – From 2/23/22
Significant Curriculum Changes

1.1 CIVIL & ENVIRONMENTAL ENGINEERING

Junko Munakata Marr

[CIM 2/16; Provost 2/16]

1 new program: BS-CTRST: Bachelor of Science in Construction Engineering
This program ultimately supports multiple Mines@150 goals: to be a leader and preferred partner in producing highly desired STEM-educated leaders, use-inspired research and innovation, and alumni affinity, visibility and involvement. Our existing expertise in geotechnical engineering, innovative construction and structural engineering materials, environmental science and engineering, and hydrology provides a solid foundation to tackle our departmental goal of becoming the go-to institution in addressing the challenge of smart, sustainable urban infrastructure. This program will leverage current strengths at Mines to educate students in the high-demand area of construction engineering. This is specifically appealing to traditional employers of Mines engineering students, as a significant portion of engineering projects become construction projects. The US has only 16 ABET-accredited Construction Engineering B.S. programs, with only three west of Texas (Arizona State, University of New Mexico, and San Diego State); other construction-oriented programs are one ABET-accredited Construction Engineering and Management B.S. program (Virginia Tech) and one ABET-accredited Civil and Construction Engineering B.S. program (U of Arkansas-Little Rock). Mines thus has an opportunity to create an exemplary program in a relatively small competitive landscape, extending the impact of our current programs in advancing Mines@150 priorities to the construction engineering arena. This degree program, in particular, represents a prime opportunity to engage alumni in the project-based curriculum, as their interest has been a driving force behind the program development.

This will be a residential program, building on the hands-on, experiential learning that is already part of CEE's two existing degree programs.

Search launched for professor in practice.

MOTION: To approve the new program in Civil and Environmental Engineering BS-CTRST: Bachelor of Science in Construction Engineering by Barankin, seconded by Liu. 14 for, 1 abstention.

Minor Curriculum Changes –

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

1.2 MECHANICAL ENGINEERING

Oyvind Nilsen

[CIM 2/16; Provost 2/16]

1 new course: MEGN475: INTRODUCTION TO NUCLEAR ENGINEERING
It advances several areas of Mines@150, including Expanding pathways to Mines and Increasing offerings and options for professionally oriented post-graduate education. This course serves as

a streamlined and simplified undergraduate entry point for the Interdisciplinary graduate nuclear science and engineering program for new students who do not have a background in nuclear engineering, which opens up the NE degree program to a wider range of educational backgrounds from outside of Mines and it opens up the Nuclear Engineering 4+1 degree program tracks to more majors from within Mines and allows students to choose to enter the 4+1 program at later points in their undergraduate studies.

MOTION: To approve the new course in Mechanical Engineering MEGN475: Introduction to Nuclear Engineering by Barankin, seconded by Nilsen. Motion passed unanimously.

New Curriculum Item(s)

Minor Curriculum Changes –

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

2.1 **GEOPHYSICS**

Ge Jin

[CIM 3/14]

1 course deactivation: GPGN101: INTRODUCTION TO GEOPHYSICS: GEOPHYSICS AND SOCIETY
The department no longer offers this optional course.

2.1.1 **1 course change:** GPGN228: INTRODUCTION TO GEOPHYSICS

The renaming (Introduction to Rock Physics → Introduction to Geophysics) is more reflective of the content of the course. This course is the first students take in the major.

2.2 **PHYSICS**

Tim Ohno

[CIM 3/14]

3 course changes: PHGN320: MODERN PHYSICS II: BASICS OF QUANTUM MECHANICS
Replaced Physics Math PHGN311 prerequisite with a more general advanced math linear algebra course.

PHGN435: INTERDISCIPLINARY MICROELECTRONICS PROCESSING LABORATORY

Changed prerequisites to allow students to not in their last year; many juniors in different departments are prepared for the course and Calc III is the highest common core across these disciplines.

PHGN466: MODERN OPTICAL ENGINEERING

Second semester of EM not necessary; the change will also permit non-physics majors to take the course.

2.3 **MINING**

Jürgen Brune

[CIM 4/4]

1 course change: MNGN318: STATICS AND DYNAMICS COMBINED FOR MN
We submitted MNGN318 Statics and Dynamics for Mining Engineers for UGC approval a few weeks ago and discovered a minor error in the prerequisites:

Instead of Math225 Differential Equations, we only require MATH213 Calculus III.

Continuing Curriculum Item(s) – From 3/9/22

Significant Curriculum Changes

3.1 ELECTRICAL ENGINEERING

Mona El Helbawy

[CIM 2/19]

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

Updated distributed sciences so that students must choose two from the following list: CSCI101, CBEN110, GEGN101, CHGN122, or CHGN125. This is how this was listed in the 2019 catalog; it was updated when CSCI101 was made a prereq for CSCI261, but we realized that requiring CSCI101 was a disservice to students coming into Mines with transfer credit for CSCI261.

Updated the "Energy Systems and Power Electronics" (ESPE) emphasis area to "Power and Energy Systems" (PES) to better describes the emphasis area. Added CSCI410 as an "Integrated Circuits and Electronics" (ICE) emphasis area elective. Justification for adding CSCI410: Elements of Computing Systems, looks at the design of a computer system from logic gates to a functional CPU using a hardware description language. The range of topics explore in this class works well with the Integrated Circuits and Electronics track because of this track looks at the design of electronic system containing a large number of individual circuit elements that work together to produce useful emergent behavior. CSCI 410 complements the required ICE course like VLSI design and semiconductor manufacturing by showing students how they would apply the principles learned in these classes to the application of building a computer.

3.1.1 [CIM 2/18]

2 course changes: EENG475: INTERCONNECTION OF RENEWABLE ENERGY, INTEGRATED POWER ELECTRONICS, POWER SYSTEMS, AND POWER QUALITY

Updating course description to better describe the course. Additional prerequisites will better prepare students for the course. EENG389 is the core course for ESPE or now PES emphasis. It provides engineering science analysis of electrical machines. In addition, it includes topics on DC, single-phase and three-phase AC circuit analysis; magnetic circuit concepts and materials; transformer analysis and operation; analysis of rotating synchronous, poly-phase induction, and DC machines; as well as laboratory study of external characteristics of machines and transformers. As such, it is required as a prerequisite for power systems and power electronics related subjects.

EENG475 was listed as a major curriculum change because of the additional prerequisite on students in the Energy minor looking to take the course. Arkadan noted students outside of Electrical Engineering may waive prerequisites based on instructor's consent.

Concern raised on use of prerequisites if not enforced and setting different standards for different students, additional concern on adding credits to the Energy minor. Note made to remain transparent to students within the minor. Comment made on setting non-EE students up to be less successful in the course without the prerequisite.

Ohno noted willingness to accept waived prerequisites for the course in the Energy minor. Suggestion made to avoid placing prerequisite waive information on an official document.

- **Question** on core courses for EE students; Arkadan informed Councilors that EENG389 is a core course for all EE students.

EENG489: COMPUTATIONAL METHODS IN ENERGY SYSTEMS
AND POWER ELECTRONICS

Updated course to 'on demand.' Removed EENG382 as a prerequisite option (course does not exist). Included additional prerequisites to better prepare students for the course. EENG389 is the core course for ESPE or now PES emphasis. It provides engineering science analysis of electrical machines. In addition, it includes topics on DC, single-phase and three-phase AC circuit analysis; magnetic circuit concepts and materials; transformer analysis and operation; analysis of rotating synchronous, poly-phase induction, and DC machines; as well as laboratory study of external characteristics of machines and transformers. As such, it is required as a prerequisite for power systems and power electronics related subjects.

2.3 **HUMANITIES, ARTS, AND SOCIAL SCIENCE**

Jay Straker

[CIM 2/21]

1 course deactivation: HASS325: CULTURAL ANTHROPOLOGY

Faculty departure.

EDS supportive of course, but cannot commit personnel to teach in the short term. HASS325 continued to have maxed out enrollment at fifty students, hope to justify continuation. Consideration made to transfer course into EDS if HASS no longer wishes to offer course.

Minor Curriculum Changes –

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

2.2 **ELECTRICAL ENGINEERING**

Mona El Helbawy

[CIM 2/18]

3 course changes: EENG383: EMBEDDED SYSTEMS

Updating course title and description to better describe the course (Microcomputer Architecture and Interfacing → Embedded Systems).

EENG391: FE ON POWER AND ENERGY SYSTEMS

Changed course offering to “on demand”, updating emphasis area title from “Energy Systems and Power Electronics” to “Power and Energy Systems” to better describe the emphasis area.

EENG470: INTRODUCTION TO HIGH POWER ELECTRONICS

Additional prerequisite will better prepare students for the course. EENG389 is the core course for ESPE or now PES emphasis. It provides engineering science analysis of electrical machines. In addition, it includes topics on DC, single-phase and three-phase AC circuit analysis; magnetic circuit concepts and materials; transformer analysis and operation; analysis of rotating synchronous, poly-phase induction, and DC machines; as well as laboratory study of external characteristics of machines and transformers. As such, it is required as a prerequisite for power systems and power electronics related subjects.

Subcommittee Updates

Common Exam and other Exam Scheduling

Vibhuti Dave

Drafted document with Myskiw, Terry, and Dave to outline changes proposed to the common exam policy; draft sent to Nicholas and committee for review. Council and department feedback requested on policy changes.

Course Learning Outcomes

Vibhuti Dave

Communication in progress with Courseleaf; process may take a few months to the end of the year to modify the tool for Mines. The tool is available, the process will need to be modified to work for Mines.

Miscellaneous / New Business

CSCI498: Augmented Reality Request for Extension for Fall 2022

Jeff Paone

CS anticipated offering special topics course in Augmented Reality for Fall 2022; were unaware of third offering until a few days prior to registration. If approved, communication will be sent to students to open for registration for Fall 2022.

MOTION: To approve the extension to teach CSCI498: Augmented Reality at third time for Fall 2022 by Barankin, seconded by Ohno. Motion passed unanimously.

Adjourn

Jeff King

Meeting adjourned: 4:50 pm.

Next meeting: May 11, 4:00-5:00 pm via Zoom.