

Colorado School of Mines – UNDERGRADUATE COUNCIL MEETING MINUTES  
November 10, 4:00 – 5:00 pm, via Zoom

**Attendees:**

**Voting Members:** 20 total (11 - majority needed for quorum). Quorum was present

P	Jeff King (chair)	P	Becky LaFrancois (EB)	P	Mike Nicholas (AMS)	P	Mona El Helbawy (EE)
P	Michael Barankin (CBE)	P	Derrick Hudson (HASS)	P	Corinne Packard (MME)	P	Nicole Smith (MN)
P	Dylan Domaille (CH)	P	Ge Jin (GP)	A	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)		Chuck Stone (PH)	A	Randy Haupt (EE)
P	Kathleen Kelly (CS) proxy for Jeff Paone (CS)						

**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)
A	Jen Drumm (CASA)	P	Josh Ramey (QBE)	A	Cheryl Medford (GE)	P	Terri Snyder (PE)
A	Katie Ludwin (CASA)						

**Special Guest(s):** Jeff Squier (PH), Suzy Beeler (QBE), John Jechura (CBE), Lori Tunstall (CEE)

**Welcome**

Jeff King

**Approval of Minutes – October 27, 2021**

Jeff King

**MOTION:** To approve the Undergraduate minutes of October 27, 2021 by Barankin, seconded by Lafrancois. Motion passed unanimously. APPROVED.

**Briefings and Information Items**

Office of Undergraduate Studies

Vibhuti Dave

No updates from the Office of Undergraduate Studies.

Registrar’s Office

Paul Myskiw

Registration will have a new interface in GEODE; the newest version of Banner connects here and directly registers students for courses, students no longer need to jump between databases. Students in variable-credit courses will be allowed to adjust the credit themselves during the registration process.

In response to feedback from students that had received incompletes over the last year the Registrar’s Office will increase messaging to students receiving an incomplete at the end of the semester as well as faculty that have assigned them. This increase will be done to ensure students know what the deadline is and do not re-register for the course.

**Continuing Curriculum Items – Continued Discussion** (from 10/27/21)

**Significant Curriculum Changes**

3.1 **PHYSICS**

Chuck Stone

[CIM 10/13]

**1 new program:** Minor in Physics

*Mines Department of Physics encourages the campus to create a Minor in Physics that can*

*follow two different tracks: Minor in Engineering Physics (Option One), and for the first time, a 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.*

In response to Council feedback, the proposed tracks for the minor in physics have been renamed. Originally, "Minor in Physics" and "Minor in Honors Physics" have been renamed to "Minor in Engineering Physics" and "Minor in Physics", respectively.

Comment on describing the Minor in Physics as more challenging due to math; Squier noted this is due to the rigor of the upper-division courses and additional mathematical classes.

**Curriculum Item(s) for Vote – From 10/13/21**  
**Significant Curriculum Changes**

1.1      **CHEMICAL & BIOLOGICAL ENGINEERING**      Michael Barankin  
[CIM 9/29; Provost 9/29]

**1 new course:**      CBEN372: INTRODUCTION TO BIOENERGY  
*Residential. The delivery of the course will continue the longstanding tradition of presenting the content in a classroom format. There will be a technical aspect to the content, but also economic, business, society aspects. Having in-person delivery allows the opportunity for discussion about all these aspects.*

**MOTION:** To approve the new course in Chemical and Biological Engineering, CBEN372: Introduction to Bioenergy by Barankin, seconded by Nilsen. Motion passed unanimously. APPROVED.

1.2      **QUANTITATIVE BIOSCIENCES AND ENGINEERING**      Josh Ramey  
[CIM 9/28]

**1 program change:**      BS-QBE: Quantitative Biosciences and Engineering  
*Moving CBEN120 to the spring semester of the students' 1st year will allow majors to experience a full year of biology versus splitting the two semesters by a year. This will also allow for innovative future curriculum changes such as adding a combined 110-120 honors section where students can be exposed to a yearlong course based undergraduate research experience. The move will also allow the QBE program to predict student enrollments earlier. To accommodate this move we have shifted the physics sequence back one semester. (PHGN1 fall sophomore year and PHGN 2 spring sophomore year). We have spoken with Physics about this change and are in support of their plans to expand their Studio Physics capacity.*

*The faculty would like to have Math201 as a co-req for BIOL300, which deals with biological data analysis which aligns nicely with Math201. The QBE faculty have informed the Math department about the proposed move.*

**MOTION:** To approve the program changes proposed to the BS-QBE: Quantitative Biosciences and Engineering program by Barankin, seconded by Jin. Motion passed unanimously. APPROVED.

1.2.1      [CIM 9/28; Provost 9/28]

**1 new course:** BIOL300: INTRODUCTION TO QUANTITATIVE BIOLOGY I  
*Introduction to Quantitative Biology I (BIOL300) is the first semester of a two-semester sequence designed to explore the interface between biology, mathematics, and computer science. BIOL300 is the first degree-specific course for QBE majors and provides foundational knowledge in Python programming, allowing students to analyze and visualize biological datasets and gain intuition for the stochastic nature of many biological processes.*

**MOTION:** To approve the new course in Quantitative Biosciences and Engineering, BIOL300: Introduction to Quantitative Biology I by Lafrancois, seconded by Barankin. Motion passed unanimously.  
APPROVED.

### Minor Curriculum Changes –

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

#### 1.3 COMPUTER SCIENCE

Jeffrey Paone

[CIM 9/22]

**1 course change:** CSCI477: ELEMENTS OF GAMES AND GAME DEVELOPMENT  
*Students will have more experience with object-oriented programming and will be introduced to event driven engines from CSCI 306. CSCI 306 has CSCI262 as a pre-req so this change is advancing the pre-req one step down the chain. CSCI 477 is an upper-level elective course taken mainly by second semester seniors. This change should not have a practical impact on student registration.*

##### 1.3.1 [CIM 9/28]

**1 course deactivation:** CSCI447: SCIENTIFIC VISUALIZATION  
*The course was last offered Spring 2013 by a faculty member who is no longer at Mines. There are no plans to offer in the near future so would like to remove from the catalog to avoid student confusion.*

#### 1.4 APPLIED MATHEMATICS & STATISTICS

Mike Nicholas

[CIM 9/16]

**1 course change:** MATH310: INTRODUCTION TO MATHEMATICAL MODELING  
*Add MATH213 as a prereq.*

*We have MATH201 and MATH225 as prereqs for this class, but since MATH213 (Calc III) is not a prereq for MATH225, we could have students in MATH310 who have not yet had Calc III. This change should not affect many (if any) students.*

#### 1.5 CHEMICAL & BIOLOGICAL ENGINEERING

Michael Barankin

[CIM 9/28]

**1 program change:** BS-CHE: BS in Chemical Engineering  
*Allowance of additional electives to help student to complete graduation requirements.*

##### 1.5.1 **2 course deactivations:** CBEN306: ANATOMY AND PHYSIOLOGY: BONE, MUSCLE, AND BRAIN *Course not offered in at least two years; replaced by CBEN304.*

CBEN309: ANATOMY AND PHYSIOLOGY: BONE, MUSCLE, AND BRAIN LABORATORY

Course not offered in at least two years; replaced by CBEN305.

1.6 **METALLURGICAL & MATERIALS ENGINEERING**

Corinne Packard

[CIM 9/29]

**2 program changes:** BS-MME: BS in Metallurgical and Materials Engineering  
*Addition of one course to our distributed science list (CSCI101) allows student to broaden their technical experience in preparation for multidisciplinary careers. We were already approving this course on a case by case basis, but this change makes it clear to students that they have additional options.*

MIN-MME: Minor in Metallurgical and Materials Engineering

*This change deletes one course and rennumbers one course in the minor to reflect changes that were approved in the major program two years ago. Not changing the minor program at the same time as the major was an oversight that we are correcting now. The change requires students to take at least 4 credits of 300- or 400- level electives (instead of 3 before) in order to meet the minimum credits for a minor. The course flow is only a suggestion, not requirement, and only non-majors can take the minor. The only expected impact is that students may have to take 1-2 more credits than 18 total credits for the minor depending on the number of credits granted by the courses they choose.*

1.6.1 **14 course changes:** MTGN219: ART AND SCIENCE OF GLASSBLOWING

*This adds wording to the course description to make it clear that the course does not count for MTGN elective credit to clarify routine confusion students in our major taking this course have. Students have assumed it counts, but our major description states that only 300+ level courses count towards electives. This change is to provide clarification to students registering to the course, but does not fundamentally change any requirements.*

MTGN281: INTRODUCTION TO PHASE EQUILIBRIA IN MATERIALS SYSTEMS

*Minor wording change to description to encompass more analysis techniques beyond Gibbs phase rule to more accurately reflect the current and historical content of the course.*

MTGN315: ELECTRICAL PROPERTIES AND APPLICATIONS OF MATERIALS

*Course description change to reflect current and future course content.*

MTGN334: CHEMICAL PROCESSING OF MATERIALS

*Grammar fix in course description.*

MTGN348: MICROSTRUCTURAL DEVELOPMENT

*Minor description change with modern terminology in field of materials engineering.*

MTGN333: INTRODUCTION TO BLADESMITHING

*Description change: removal of mention of summer offering. Course is not offered in the summer.*

MTGN350: STATISTICAL PROCESS CONTROL AND DESIGN OF EXPERIMENTS

*Minor course description edits to reflect current content of the course.*

MTGN430: PHYSICAL CHEMISTRY OF IRON AND STEELMAKING

*Course description updated to remove frequency of offering, which will depend on the department's ability to staff the course.*

MTGN442: ENGINEERING ALLOYS

*Updating course description to reflect current frequency of offering.*

MTGN451: CORROSION ENGINEERING

MTGN464: FORGING AND FORMING

*Updating course description for grammar.*

MTGN465: MECHANICAL PROPERTIES OF CERAMICS

MTGN475: METALLURGY OF WELDING

MTGN475L: METALLURGY OF WELDING LABORATORY

*Updating course description to reflect current offering schedule.*

1.6.2 **11 course deactivations:** MTGN311: STRUCTURE OF MATERIALS

MTGN311L: STRUCTURE OF MATERIALS LABORATORY

*Courses no longer offered. Replaced by MTGN211.*

MTGN351: METALLURGICAL AND MATERIALS THERMODYNAMICS

*Course no longer offered. Replaced MTGN251.*

MTGN381: INTRODUCTION TO PHASE EQUILIBRIA IN MATERIALS SYSTEMS

*Course no longer offered. Replaced MTGN281.*

MTGN407: STEEL BAR MANUFACTURING

*Course no longer offered.*

MTGN412: CERAMIC ENGINEERING

*Elective course is no longer offered. Replaced by lower-level ceramics course required in program, rather than elective.*

MTGN415: ELECTRICAL PROPERTIES AND APPLICATIONS OF MATERIALS

*Course no longer offered. Replaced by required course MTGN315.*

MTGN450: STATISTICAL PROCESS CONTROL AND ADESIGN OF EXPERIMENTS

*Course no longer offered. Replaced by MTGN350.*

MTGN461: TRANSPORT PHENOMENA AND REACTOR DESIGN LABORATORY

*Course no longer offered.*

MTGN463: POLYMER ENGINEERING

*Course no longer offered.*

MTGN466: MATERIALS DESIGN: SYNTHESIS, CHARACTERIZATION AND SELECTION

*Course longer offered. Replaced by two-semester senior design course under numbers MTGN467 and MTGN468.*

1.7 **ECONOMICS AND BUSINESS**

Becky Lafrancois

[CIM 9/29]

**2 course changes:** EBG437: REGIONAL ECONOMICS

*We would like to change the pre-requisites for this course to enable more students to take it. The intermediate level pre-requisites are not really necessary for this course. The campus needs more 400 level writing approved H&SS courses, and this will help fulfill the need.*

EBGN443: PUBLIC ECONOMICS

*We would like to change the pre-requisites for this course to enable more students to take it. The intermediate level pre-requisites are not really necessary for this course. The campus needs more 400 level writing approved H&SS courses, and this will help fulfill the need.*

Question raised on the listed EB courses in item 1.7 being approved to be HASS courses; these courses

have been HASS, 400-level writing courses for several years. Additional enrollment in the courses would be encouraged with this change.

1.8 **PETROLEUM ENGINEERING**

Terri Snyder

[CIM 10/5]

**1 course change:** PEGN440: INTRODUCTION TO THE DIGITAL OILFIELD

*The Petroleum Engineering Department would like to change the name of this course to "Introduction to The Digital Oilfield" to better reflect the content of the capstone course for the minor. This change would also eliminate confusion with the PEGN 438 "Petroleum Data Analytics" course which is a requirement for the PE major.*

**MOTION:** To approve the curriculum items listed in items 1.3 through 1.8 in an omnibus Council vote by Packard, seconded by Barankin. Motion passed unanimously. APPROVED.

Noted that program changes can now be listed as minor changes by the Steering committee.

New Curriculum Items

**Significant Curriculum Changes**

2.1 **PETROLEUM ENGINEERING**

Linda Battalora

[CIM 10/20]

**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 PEGN262 (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.*

PE requested Council approval to move the three professional skills series one, two, and three to be offered earlier in the program. The series had been developed to advance learning professional development skills in preparation for success in upper-level courses at Mines and the workplace. Feedback was received from the program advisory board and recruiters that students were highly skilled but still required oral communication skills, societal awareness, and professional skills at even sophomore-level internships. The skills courses would then be taught prior to the senior year.

Comment made on this being a suggested course map change, and not a program change; due to the nature of CIM, rearranging courses in the suggested timeline constitutes a program change.

Comment made on the moving of HASS200 affecting students ability to take upper-level HASS courses; Battalora noted that these are suggested timelines and students are able to take HASS200 where it can

fit into their schedule. Students entering the program with transfer or AP credits would be exempt from this flow-chart, as well.

Suggestion made in considering how flow-charts are formatted in the Catalog, as some students may not follow these explicitly. Additional concern noted on students being focused on these flow-charts and losing flexibility within a program and unable to take HASS courses later in their academic career to fulfill requirements.

### Minor Curriculum Changes

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

#### 2.2 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.*

#### 2.3 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.*

### Continuing Curriculum Items – Continued Discussion (from 10/27/21)

#### Significant Curriculum Changes

#### 3.2 PETROLEUM ENGINEERING

Theresa Snyder

[CIM 10/20]

**1 program change:** MIN-PTDA: Minor in Petroleum Data Analytics

*Due to the new pre-requisite requirement (CSCI 101 Introduction to Computer Science, 3 credit hours) for CSCI 261 Programming Concepts, 3 credit hours, the Petroleum Engineering Department's Undergraduate Curriculum Committee has reviewed the minor and proposes the following changes to the Petroleum Data Analytics minor. The changes will allow the student to obtain the minor and the BS degree without having to take three additional credit hours. The changes will also allow the students flexibility for scheduling classes and provide more choices for their particular interest.*

Feedback was received from CS on a few courses within the minor. CSCI303: Introduction to Data Science was kept and CSCI102 was added. Discrete mathematics was removed as it was not believed to relate to data analytics.

Comment made on the EBG461 course, response had not been heard from the instructor as of 11/10 on availability (only thirty seats are offered) for the ETM degree, undergraduate ECON, and the Business Engineering and Management Science degree.

Note made on prerequisites not requiring linear algebra for a data analytics minor; Councilor commented that linear algebra could be added as a technical elective.

### Minor Curriculum Changes –

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

#### 3.3 MINING

Jurgen Brune

[CIM 10/13; Provost 10/13]

**3 new courses:** MNGN203: SOFTWARE FUNDAMENTALS FOR 3D DATA ANALYSIS AND MINE PLANNING  
MNGN301: MINE SURVEYING

*This is a re-organization of the existing Mining Engineering Summer Field Camp, MNGN300 MNGN300 (3 CR) will be broken up into MNGN203 (1 CR, 1 week) and MNGN301 (2 CR, 2 weeks). Sophomores will take MNGN308 (1 CR, 1 week, existing) and MNGN203 for the first two weeks of the Summer following the Sophomore year.*

*Juniors will take MNGN301 for the first two weeks of the Summer following the Junior year.*

MNGN205: MINING ENGINEERING FIELD EXPERIENCE

*The objectives of this course are to provide the student with a fundamental understanding of mine operations, exploration, mineral processing, and the importance of safety, social and community factors, and environmental stewardship through hands-on exercises and tours of mines, processing facilities, and industry-relevant sites. The curriculum within this course has been designed to expose students to a wide array of experiences and provide insights that will aid them in upper-division courses.*

#### 3.4 PHYSICAL EDUCATION & ATHLETICS

Dixie Cirillo

[CIM 10/15]

**1 course change:** PAGN202: SOCCER

*Course title change “Indoor Soccer” → “Soccer” to allow for flexibility in offering the class indoors or outdoors depending on the instructor, season, or conditions.*

#### 3.5 PETROLEUM ENGINEERING

Linda Battalora

[CIM 10/20]

**2 course changes:** PEGN382: PROFESSIONAL SKILLS 2

*Addition of PEGN282 Professional Skills 1 as a prereq.*

PEGN482: PROFESSIONAL SKILLS 3

*Addition of PEGN382 Professional Skills 2 as a prereq.*

### Subcommittees Updates

#### Common Exam and other exam scheduling

The subcommittee has met and are brainstorming ideas. The USG representative has sent a survey to the undergraduate student population, a total of 900 responses were received as a 11/10.



Committee has met with the Registrar's Office for possible approaches and additional data.

#### Tracks and Emphasis Definitions

Subcommittee has met and have a recommendation in process. Data is being assessed for how many minors and ASIs are awarded.

#### **Miscellaneous / New Business**

##### Request for MEGN498 pilot extension

Oyvind Nilsen

A course had been partially entered in CIM, but was not submitted. New changes and updates were provided for the course, but the deadline for Spring 2022 new course submissions was missed.

##### Request for CBEN498A pilot extension

Michael Barankin

A one-credit course has been offered every year for the last three years for iGEM. The deadline for submission of an official course number had been missed, a request will be placed in spring for the Fall 2022 semester.

**MOTION:** To approve the extension for piloting MEGN498 and CBEN498A by Barankin, seconded by Lafrancois. 14 for, 2 abstentions. APPROVED.

#### Moving Add Dates for Classes

Undergraduate Council had discussion of moving up the add date for courses in Spring 2019. Archived minutes will be searched for the outcome of this discussion and if Council voted in 2019.

The add date at Mines is significantly later compared to other institutions. Data of registration dates should be assessed to understand the outcome of these students and if this change would pose a significant problem.

#### Athletics Excused Absences

Dixie Cirillo

Men's and women's cross-country are headed to National's. Men's and women's soccer are nationally ranked and will head to National's. NCAA football will be hosting the NCAA tournament. Volleyball has been nationally ranked and will go to the NCAA tournament. Athletics anticipates all fall sports to go to the NCAA tournaments.

Councilors encouraged to disseminate information to departments on upcoming excused absences.

#### **Adjourn**

Jeff King

Meeting adjourned: 4:54 pm.

Next meeting: November 24, 4:00-5:00 pm via Zoom. Please send all items for agenda to [mgreen1@mines.edu](mailto:mgreen1@mines.edu).