

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

Attendees:

Voting Members: 15 total (10 needed for quorum). Quorum was present.

P	Ventzi Karaivanov (chair)	P	Andrew Pederson (EB)	P	Mike Nicholas (AMS)	P	Chuck Stone (PH)
P	Michael Barankin (CBE)	P	Jay Straker (HASS)		Gerald Bourne (MME)		Rennie Kaunda (MN)
P	Dylan Domaille (CH)	P	Ge Jin (GP)	P	Zibo Wang (CS)	P	Mathias Burisch Hassel (GE)
P	Linda Battalora (PE)	P	Hongyan Liu (CEE)	P	Jeff Wheeler (ME)		Mark Bowen (USG)
P	Jack Bringardner (EDS)	P	Brianna Buljung (LB)		Hisham Sager (EE)		

Other Regular Attendees and Guests

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

Special Guest(s): Justin Shaffer, C. Josh Ramey, Xerxes Steirer

Welcome

Ventzi Karaivanov

V. Karaivanov reminded that per the Councils of the Faculty Senate bylaws, representatives are elected in the spring of even number years and elections are to be held during the spring semester with terms of service to begin the following August. Please remind your department that if your term is finishing up then a new representative will need to be elected for the fall. Additionally, V. Karaivanov sent out a document to share best practices to create a guide for the new representatives and new chair to ensure better continuity between councils. Please add any feedback or input.

- **Question:** C. Ramey asked if any progress has been made about adding additional programs to the list of representatives. QBE currently has about 250 registered majors, making them one of the larger degree-granting programs on campus but there is still no representation on the Undergraduate Council. As representatives are added, it is pertinent to also think about the interdisciplinary program representation.
- **Answer:** V. Karaivanov agreed and added that this was brought before the Faculty Senate and Faculty Senate president. There is a by-laws discussion coming up so he will bring up how language can be changed to include interdisciplinary programs. The by-laws also mentioned divisions which we no longer have so the by-laws need to be updated.

Determine the date of the next meeting (5/1 or 5/8)

The next UGC meeting is scheduled for April 24th which will need to be cancelled as it coincides with the Faculty Awards Ceremony. From the poll, there were 5 votes for May 1st and 8 votes for May 8th. Therefore, UG will skip one meeting and have the final meeting on May 8th.

Approval of Minutes – March 27, 2024

Ventzi Karaivanov

MOTION: Motion to approve previous minutes was moved by M. Barankin and seconded by G. Jin. The previous minutes were approved with 12 approved, 0 opposed, and 1 abstention.

Briefings and Information Items

Registrar's Office

D. Scott Heath for



Paul Myskiw

The returning student policy that was brought up during the previous meeting is already being enforced so this proposed policy change has been withdrawn. Also, S. Heath reminded the council that the Banner SaaS implementation has been pushed back from May to September. There will be more information to come on what tools will be available with the migration as well as an official September launch date.

Majors Exploration Course

Vibhuti Dave
Justin Shaffer

The majors on campus are a bit imbalanced with 50% of students in Mechanical Engineering and Computer Science whereas all Earth departments only make up around 5% combined. This brought up the idea that maybe students have not explored Mines as much as they could. The point of the new course proposal is to provide students with an opportunity early on to see what other career options are available and explore different academic pathways through the context of engineering innovations. During the course, dynamic, enthusiastic, and inspiring speakers (including alumni, industry leaders, and Mines faculty) will be invited to give TED-style talks about how their own academic and career paths led them to work on various engineering innovations in hopes of highlighting Mines' priorities and current global issues while also helping students explore majors and pathways. Learning outcomes of the course will be that students are able to explore innovative engineering and STEM projects and how they connect with their career interests, identify majors, minors, and other academic opportunities at Mine, and make connections and form professional networks. Some possible themes for speakers include carbon sequestration, feeding the world, global energy futures, improving world infrastructure, clean water, aerospace, space exploration, rare Earth minerals and mining, improving health and well-being, and AI and society. J. Shaffer requested that if anyone has input, additional theme ideas, speaker suggestions, please reach out via email.

All first-year students will be required to enroll in this course. The course will meet in two sections in Bunker Auditorium on Wednesday at 12:00 pm and 4:00 pm. There will also be an online option for students who cannot register for those times. There will be six course meetings with each having one guest speaker. Since Bunker holds 1,400, everyone is encouraged to attend the talks (not just students). A team of faculty, Student Life, students, and alumni will be convened to help plan the course and select speakers. J. Shaffer will be the instructor of the course and host the invited talks. For fall 2024, student attendance at the talks will be counted as part of their CSM101 grade, thus the course will be zero credits. iClickers will be utilized to capture attendance and engage students. The course will be piloted this fall and be evaluated to determine its impact. If successful, the course may be converted to a standalone one-credit course. PowerPoint slides from the meeting will be shared on the UG Council Canvas page.

- **Question:** J. Bringardner asked if there has been any discussion with the director of Cornerstone or the Futures course to see how this course can collaborate with these and what they are already doing in this space for major exploration?
- **Answer:** J. Shaffer answered that he met with A. Kerr to talk about what is going on with Futures and how this can complement that course. He has not met with the Cornerstone or Capstone courses yet but that is on the to-do list to follow up with them as well recruit additional people to give input and ensure that this course is building on and complementing what already exists instead of replicating information.
- **Question:** D. Domaille asked has there has been a stated need for this course? The imbalance of majors on campus is not necessarily a bad thing. Is there evidence that a ME major regretting their major decision or is there issues with undecided majors not knowing what path to take?

- **Answer:** J. Shaffer answered that he is unsure of any data around the need for the course. However, because majors seem to be getting more and more specialized earlier and earlier, the first semester for students has become the only window they have to see other possibilities. During the second year, it is much harder to change majors. On Tableau, there is data that show on average, for the 10 years or so, about 30% of Mines students do switch majors at some point. However, that number has been dropping dramatically. It went from a high of about 40% in 2012-2013 and has dropped down to 20% as of last year's data. Therefore, students are changing majors less often, possibly due to more satisfaction in their major or they are more locked in to their major. The idea behind this course is to make sure that students know what their options are and that they know what degree programs exist to make more informed decisions.
- **Question:** D. Domaille mentioned that there are issues with the core becoming more rigid which makes registering for courses more difficult. Are there any anticipated challenges with fitting in a potential additional one-credit course early on?
- **Answer:** V. Dave answered that this is one of the reasons why, if possible, this course will be integrated into CSM101. However, on the flip side, we need to make sure we are not packing too much into CSM 101 and make sure the course has its own identity. These are all conversations that will need to happen. At least for the fall of 2024, we have a solution in place. But long term, where this fits within the core will be more of a long-term conversation over the next academic year.
- **Question:** J. Bringardner asked if there has been discussion about focusing the six lectures in the research pillars since there are six of those?
- **Answer:** V. Dave answered that the research pillars were one of the sources of inspiration. Several different sources were used to figure out what the themes might be and which teams we want to invite speakers from.

Curriculum Item(s) for Council Vote

1.1 De-list the semester offered in the catalog Ventzi Karaivanov

MOTION: The motion to approve de-listing the semester offered in the catalog was moved by M. Barankin and seconded by A. Pederson. The motion to approve de-listing the semester offered in the catalog was approved with 11 approved, 1 opposed, and 2 abstentions.

1.2

AMS		Mike Nicholas
CIM 2/28		
1 course change:	MATH431: MATHEMATICAL BIOLOGY	
	Adding an option of BIOL300 as a prerequisite so that QBE students can take MATH431. This is a course that QBE students have often wanted to take in the past, but the MATH310 prerequisite is difficult for them.	

MOTION: The motion to approve the MATH431 course change was moved by M. Barankin and seconded by J. Wheeler. The motion to approve the MATH431 course change was approved with 13 approved, 0 opposed, and 1 abstention.

1.3

CBE		Michael Barankin
CIM 3/6		
1 course change:	CBEN472: INTRODUCTION TO ENERGY TECHNOLOGIES	
	Semester varies.	

MOTION: The motion to approve the CBEN472 course change was moved by M. Barankin and seconded by J. Wheeler. The motion to approve the CBEN472 course change was approved with 13 approved, 0 opposed, and 0 abstentions.

New Curriculum Item(s) for Introduction

2.1

MECH		Jeff Wheeler
CIM 4/3		
2 course changes:	MEGN330: INTRODUCTION TO BIOMECHANICAL ENGINEERING	
	This class is broad and while it touches on topics of the prior pre-reqs, the fundamental knowledge is not required to succeed in this class. These pre-reqs are not necessary for the class in its current form. Removal of these pre-reqs will also make the class more accessible to the majors across campus, particularly for those who may want to pursue the minor in biomechanical engineering.	
	MEGN430: MUSCULOSKELETAL BIOMECHANICS	
	As pre-reqs are being removed for MEGN330, we would like to explicitly add them here. This class will require background in mechanics of materials and dynamics to succeed in applying advanced mechanics concepts to biological tissues.	

This proposal is to change the pre-requisites to give students more flexibility if they are interested in pursuing the Biomechanics track. MEGN330 currently has several pre-requisites which forces all students to start fairly late in their academic careers and also makes it difficult to get into MEGN430 which is the class that follows. Per the course instructor, they felt that Statics is the only essential pre-requisite for MEGN330 and moved the old MEGN330 pre-requisite to MEGN430.

2.2

CBE		Michael Barankin
CIM 3/29		
1 program change:	BS-CHE: BS IN CHEMICAL ENGINEERING	
	Updating elective lists	

This change is to the Bio tech electives list. To qualify as a chemical engineering elective, the course needs to have a CBE course listed as a co- or pre-requisite.

2.3

QBE		C. Josh Ramey
CIM 3/29		
1 program change:	MIN-BIOL: MINOR IN BIOLOGY	
	Changes add possible electives for the Biology minor and delete courses that are no longer offered.	

The minor initially had a one-credit seminar course that had staffing difficulties, so it is being deleted as one of the required courses. Also, there are more elective QBE courses available that students are now allowed to take for the minor.

2.4

PE		Linda Battalora
CIM 4/10		
1 course change:	PEGN350: GEOTHERMAL ENERGY	
	Resurrection of course adjusted to increase enrollment.	

The PE department has had PEGN350 on the books for about 20 years, but it has not been taught for at least 18 years. The Energy minor coordinator reached out to PE to be involved in the geothermal energy space in the curriculum (cross-list with ENGY350 and MNGN350). This course will now be resurrected and revised to Geothermal Energy (from Sustainable Energy Systems). This will make it easier for PE students to take the course within their discipline and have that course grade factored into their discipline GPA.

Continuing Curriculum Item(s) for Discussion

3.1

ENGY		Xerxes Steirer
CIM 3/21		
1 course change:	ENGY419: THE PRINCIPLES OF SOLAR ENERGY SYSTEMS	
	<p>Overview of the solar resource and components of solar irradiance; principles of photovoltaic devices and photovoltaic system design; photovoltaic electrical energy production and cost analysis of photovoltaic systems relative to fossil fuel alternatives; introduction to concentrated photovoltaic systems and manufacturing methods for wafer-based and thin film photovoltaic panels. 3 hours lecture; 3 semester hours.</p> <p>Offering at least one solar energy course on a continual basis specifically advances Mines@150 Mission, Vision and Strategic Plans. First, today's students demand classes in sustainable energy including solar energy. This course has been offered in the past (formerly PHGN419 - no longer offered, and ENGY498) with high attendance rates and great student feedback. Not offering a solar energy course would be in direct opposition to the M@150 goal of expanding our offerings. Second, the Vision of Mines @150 includes energy in all its forms, from production,</p>	

	<p>manufacturing and use topical areas. The energy from the sun is the most abundant form of energy and its use requires advanced educational offerings for science and engineering students. Third, if Mines is to become top of mind, we must include a diverse set of energy courses, which prepare students to work on the most pressing issues of our time.</p> <p>Creation of this class as ENGY419 is necessary due to its prior offerings in Physics as PHGN419, which has programmatically lost support in the department. This currently unavailable course is referenced in 5 tracks including:</p> <ol style="list-style-type: none">1. BS-DSGN: BS in Design Engineering2. MIN-PH: Minor in Physics3. BS-MECH: BS in Mechanical Engineering4. MIN-ENGY: Minor in Energy5. BS-CHM: BS in Chemistry <p>ENGY419 will create continuity for solar energy education and help to grow energy education offerings by providing suitable foundation at Mines. Has already run twice as ENGY498.</p>
--	--

5:00 pm

Adjourn at 4:51

Ventzi Karaivanov

The next meeting is on May 8th, 4:00-5:00 pm, via Zoom. Please send agenda items to Ventzi Karaivanov (vkaraiva@mines.edu) and Kristeen Serracino (kristeen.serracino@mines.edu) one week prior.