Colorado School of Mines – UNDERGRADUATE COUNCIL MEETING MINUTES
November 8, 4:00 – 5:00 pm, via Zoom

Attendees:

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

P	Ventzi Karaivanov (chair)		Andrew Pederson (EB)	P	Mike Nicholas (AMS)	P	Chuck Stone (PH)
P	Michael Barankin (CBE)	P	Jay Straker (HASS)	P	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)	P	Mark Bowen (USG)
P	Jack Bringardner (EDS)		Brianna Buljung (LB)	P	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)		Vibhuti Dave (UGS)	P	Deb Jordan (Trefny Center)		Kendra Stansbury (RO)
P	Katie Ludwin (CASA)		Danielle Boileau (CASA)		Cheryl Medford (GE)	P	D. Scott Heath (RO)
		P	Colin Terry (SL)				

Special Guest(s): Sid Saleh, Seth Vuletich

Welcome Ventzi Karaivanov

Introduction of Kristeen Serracino

Reminder: This will be the only meeting we have for the month of November. Our next meeting is scheduled for December 13th. We have deadlines approaching in terms of CIM submissions. The new program submission deadline is December 6th. The program change submission deadline is January 3rd. The new courses/course changes submission deadline is January 17th. Everything must be introduced one week prior.

Approval of Minutes – October 25, 2023 Ventzi Karaivanov

- **Question:** On the minutes, sections are only under Ventzi's name instead of the representative's name.
- **Answer:** We will get that corrected.
-

MOTION: Motion to approve previous minutes were moved by Michael and seconded by Ge Jin. Minutes were approved with 13 approved, 0 opposed, and 2 abstentions from those present.

Briefings and Information Items

Registrar's Office Scott Heath for Paul Myskiw

Reminder that registration is next week. You will probably be receiving requests for permission and registration action forms. We noticed today that some of the pre-req approvals from last year are not showing up in the system. This may be due to a bridging systems error. If your department finds any errors, please send them to the Registrar's Office as soon as possible so that we may get that corrected.

We have a tight deadline this year for catalog changes because of the move to the new student information system. We are publishing on May 1st.

- **Question:** Is it possible for registration time to be scheduled at times when students do not have

class? Currently, we are facing issues with students having to take mandatory quizzes with a different section to register. We also have students skipping classes so that they can register.

- **Answer:** There may be no solution to this issue. It's a common challenge every university changes. Currently, registration starts at a specific time but continues to stay open so that they can continue registering for courses. We will discuss with Paul if there is anything we can do to alleviate these issues, but welcome suggestions.
- **Comment:** In the past, this issue was discussed in Faculty Senate. One of the solutions proposed was moving registration to after normal lecture hours. However, this would not work since support staff would be gone for the day and not available to issues or questions. It limits registration time to normal business hours.
- **Comment:** One of the changes moving to the new student information system in the Cloud is improvement in bandwidth. This will hopefully help with not having to stagger enrollment times.

1.1 Updated Changes to Absence Policy Ventzi Karaivanov

- **Question:** The latest copy we have on the Undergrad Council Canvas page is from the 10/18 meeting. Is that the latest language we are voting on today?
- **Answer:** Yes. We have minor promised changes brought up by the Physics department but was it available on Canvas is the most up to date.
- **Question:** I just received an email from a physics colleague about the Excused absence policy regarding our PHGN100 and PHGN200 studios. It states: the statement in the policy "A student can jeopardize their academic status with an unreasonable number of excused graded activities. If the number of excused graded activities surpasses a reasonable threshold set in the course syllabus, then the student may be advised to withdraw from the course" is a bit vague to me. Does this mean we can set an upper limit of excused studios and give zeroes after that? Or does this just mean that when students hit the limit that we should suggest to them that they withdraw from the course?
- **Answer:** The new language was drafted by faculty to underscore that essential course is necessary to show mastery and competence in the courses. When a student misses too much, faculty should be empowered to have conversations with the students to say, it may best in your best interest to withdraw from the course or seek another alternative to finish the course with their earned grade.

MOTION: Motion to approve updated changes to the Absence Policy were moved by Michael and seconded by Ge Jin. Changes to the Absence Policy were approved with 12 approved, 2 opposed, and 1 abstention from those present.

1.2 **Curriculum Item(s) for Council Vote**

CEE		Hongyan Liu
CIM 09/09/23		
1 New Course:	CEEN 497 – Practices and Principles of Environmental Consulting	
	This course provides an in-depth understanding of the environmental consulting industry with a particular focus on problem solving and project delivery to meet expectations of professional services organizations (environmental consulting firms). Using case studies, real-life consulting	

	assignments, and business scenarios, the course offers exposure to the technical, ethical, and business challenges of winning and executing environmental projects. **MOTION:** Motion to approve CEEN497 new course was moved by Michael and seconded by Ge Jin. CEEN497 new course was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.

1.3

CH		Dylan Domaille
CIM 09/27/23		
1 New Course:	CHGN 423 – SOLID-STATE CHEMISTRY	
	Dependence of properties of solids on chemical bonding and structure; principles of crystal growth, crystal imperfections, reactions and diffusion in solids, and the theory of conductors and semiconductors **Question:** Has this course been piloted? Who was the prof that offered it? Are there pre-reqs for this course since it's a 400-level course? **Answer**: Yes. This is currently a graduate course, but it was taken by a few undergraduates last Spring by Annalise Maughan. No prereqs for this course but will confirm with the instructor since it is a 400-level course. **MOTION:** Motion to approve CHGN423 new course was moved by Michael and seconded by Dylan. CHGN423 new course was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.	

1.4

EB		Andrew Pederson
CIM 10/04/23		
1 Course change:	EBGN 305 – FINANCIAL ACCOUNTING	
	EBGN201 is not needed as a pre-req. **MOTION:** Motion to approve EBGN305 new course was moved by Michael and seconded by Ge Jin. EBGN305 new course was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.	

1.5

EB		Andrew Pederson
CIM 10/04/23		
1 Course change:	EBGN 345 – PRINCIPLES OF CORPORATE FINANCE	
	Remove unnecessary EBGN201 pre-req and add EBGN305 Accounting.	

	MOTION: Motion to approve EBGN345 course change was moved by Michael and seconded by Linda. EBGN345 course change was approved unanimously with 16 approved, 0 opposed, and 0 abstentions.

1.6

EB		Andrew Pederson
CIM 10/04/23		
1 Course change:	EBGN 346 – INTRODUCTION TO INVESTMENTS	
	Remove EBGN201 add EBGN305 Accounting **MOTION:** Motion to approve EBGN346 course change was moved by Michael and seconded by Ge Jin. EBGN346 course change was approved unanimously with 16 approved, 0 opposed, and 0 abstentions.	

1.7

EB		Andrew Pederson
CIM 10/04/23		
1 Course change:	EBGN 485 – BUSINESS STRATEGY	
	Add Necessary Pre Rec for Capstone Class **MOTION:** Motion to approve EBGN485 course change was moved by Michael and seconded by Ge Jin. EBGN4855 course change was approved unanimously with 14 approved, 0 opposed, and 0 abstentions.	

1.8

AMS		Mike Nicholas
CIM 9/27/23		
1 Course change:	MATH 307 – INTRODUCTION TO SCIENTIFIC COMPUTING	
	Just adding CSCI128 to the list of pre-reqs. CS128 to CSCI128 correction needs to be made in CIM. Comment: There was a question during the last meeting regarding CSCI128, which is a new course. There was concern as to how this would impact on students that haven't taken this course prior to the new catalog and if we should enforce it. Comment: It should have been added to the CIM submission that includes CS102 as an acceptable pre-req in addition to CSCI128. **MOTION:** Motion to approve MATH307 course change was moved by Michael and seconded by Ge Jin. MATH307 course change was approved unanimously with 16 approved, 0 opposed, and 0 abstentions.	

1.9

AMS		Mike Nicholas
CIM 9/27/23		
1 Course change:	MATH 332 – LINEAR ALGEBRA	
	Adding CSCI128 as pre-req to MATH307, MATH332, and MATH334 and a co-req to MATH225 to be able to leverage programming ability in these courses. **Comment:** The changes are saved but not submitted. Please submit to be processed. **Question:** Have not all students taken CSCI128 prior to this change? **Comment:** It was suggested to wait a year to enforce the pre-req change. It might be better to add CSC101 or 102 as pre-reqs instead. **MOTION:** Motion to approve MATH332 course change was moved by Linda and seconded by Michael. MATH332 course change was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.	

1.10

MEGN		Jeff Wheeler
CIM 10/02/23		
1 Course deactivation:	MEGN 436 – COMPUTATIONAL BIOMECHANICS **MOTION:** Motion to approve MEGN436 course deactivation was moved by Michael and seconded by Jeff. MEGN436 course deactivation was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.	

1.11

MEGN		Jeff Wheeler
CIM 10/03/23		
1 New Course:	MEGN 454 – ORBITAL MECHANICS	
	This new course is being transitioned from an existing 498 course within the department. The course was designed to expand course offerings and help diversify delivery of course material, through its unique approach to combined lectures, course projects, and active learning. The course is structured as a residential course that helps prepare our students for future careers in the aerospace industry as well as to return to our graduate mechanical engineering and space resource programs. **MOTION:** Motion to approve MEGN454 new course was moved by Michael and seconded by Hisham. MEGN454 new course was approved unanimously with 13 approved, 0 opposed, and 0 abstentions.	

1.12

MEGN		Jeff Wheeler
CIM 10/02/23		
1 New Course:	MEGN 465 – ELECTRIC VEHICLE POWERTRAIN SYSTEMS	
	Expanding Offerings and Diversifying Delivery: Offering a class on electric vehicle powertrain systems demonstrates the university's commitment to expanding its educational offerings in response to the changing needs of industry and society. Electric vehicles are becoming increasingly important in the transportation sector, and having an applied understanding of their powertrain systems is crucial for students pursuing careers in automotive engineering. Strengthening Affinity for Mines: A practical, hands-on class on electric vehicle powertrain systems will be unique to Mines and can enhance the university's reputation and attract students and alumni who are interested in emerging technologies and sustainability. Being Innovative and Entrepreneurial: The field of electric vehicles is characterized by innovation, particularly in the development of new powertrain technologies. Offering a lab-based class on electric vehicle powertrain systems encourages students to think creatively about addressing real-world challenges. **MOTION:** Motion to approve MEGN465 new course was moved by Michael and seconded by Linda. MEGN465 new course was approved unanimously with 13 approved, 0 opposed, and 0 abstentions.	

1.13

MEGN		Jeff Wheeler
CIM N/A		
1 Course change:	MEGN 315 – DYNAMICS	
	Remove MATH 225 (Differential Equations) as a pre-reqs, Add MATH 225 as co-req. Differential equations are not used until the end of the course in a vibrations unit. **MOTION:** Motion to approve MEGN315 course change was moved by Michael and seconded by Jeff. MEGN315 course change was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.	

1.14

MEGN		Jeff Wheeler
CIM 10/03/23		
1 Program Change:	MIN-BMECHE : Minor in Biomechanical Engineering	

	The proposed change replaces the elective MEGN 436 (no longer offered) with MEGN 536. **MOTION:** Motion to approve MIN-BMECHE program change was moved by Michael and seconded by Jeff. MIN-BMECHE program change was approved unanimously with 14 approved, 0 opposed, and 0 abstentions.

1.15

MEGN		Jeff Wheeler
CIM 10/03/23		
1 Program Change:	BS-MECH: BS in Mechanical Engineering	
	Updated list of approved electives to include courses approved by the ME faculty. Biomechanics track: Updated list of electives to remove MEGN 436 Computational Biomechanics (no longer offered) as an elective. Added MEGN 536 Computation Biomechanics as an elective to the track. Automotive track: Updated list of electives to include new course offerings. **MOTION:** Motion to approve BS-MECH program change was moved by Michael and seconded by Jeff. BS-MECH program change was approved unanimously with 15 approved, 0 opposed, and 0 abstentions.	

2. New Curriculum Item(s)

2.1

AMS		Mike Nicholas
CIM 10/25/23		
1 Course Change:	MATH213 : CALCULUS FOR SCIENTISTS AND ENGINEERS III	
	Adding CSCI102 alongside CSCI128 as coreq for Calc III for students on older catalog. **Question:** How do you plan to handle students that have taken CSCI101 but not CSCI102 because it wasn't required for their major? You may want to add CSCI101 or CSCI102 in the wording. **Answer:** CSCI101 does not have any programming content, which led to the creation of CSCI102 and CSCI128. If programming is the reason for this pre-req, I am not sure CSCI101 would be enough.	

2.2

AMS		Mike Nicholas
CIM 10/25/23		

1 Course Change:	MATH225 : DIFFERENTIAL EQUATIONS
	Adding the new CS course, CSCI128, as a co-req, including the older CS102 as a possibility as well for students on older catalogs. **Question:** Do students need to know how to program? **Answer:** Currently, they do not. Our hope with the changes in the core has always been that we could include programming exercises in classes where it makes sense such as differential equations. There are a lot of rich models and differential equations that cannot be solved by hand but can be approached with numerical methods. **Question:** Will you require students to solve some of the differential equations by hand and then compare with numerical results? **Answer:** Yes. The course will not change. The topics listed in the course include solutions by hand such as separation of variables and loss transform techniques. But if students could also make comparisons on similar or harder problems solved numerically, we feel that would be valuable to students.

2.3

AMS		Mike Nicholas
CIM 10/24/23		
1 Course Change:	MATH310 : INTRODUCTION TO MATHEMATICAL MODELING	
	Adding a CSCI128 prereq to be able to leverage that course. This shouldn't affect many students since almost all students will be taking CSCI128 well before they reach MATH310. **Question:** If students have to pass the co-req and calc III, is it necessary to add those pre-reqs for those of higher-level courses if it would already be required for lower-level courses? **Answer:** We picked the following 300 level courses because sometimes students enter them early if they come in with enough math credit. Sometimes students don't take Calc II or Calc III or Differential Equations here at Mines, so we added the programming pre-req for Linear Algebra and the Probability course so that they could still be able to handle the programming exercises in those courses. **Comment:** If you require CSCI128 as a pre-req for this course, which requires the student to be enrolled in it at the same time, but they could just as easily fail CSCI128 as they pass MATH225. Without having it as a pre-req for 310, that would allow them to get by without having passed CSCI128. **Comment:** For Chemistry, we do not have students taking CSCI128 till Spring semester of their sophomore year and Calc III in the Fall. Comment: We also need to be mindful that there would be enough seats for CSCI128, so we might need to assess the impact on that, knowing that not all students are taking this in the Fall and Spring so there is limited capacity of seats in CS.	

2.4

AMS		Mike Nicholas
CIM 10/25/23		
1 Course Change:	MATH334 : INTRODUCTION TO PROBABILITY.	
	Adding the new CS course, CSCI128, as a prereq, including CSCI102 for students on older catalog.	

3. Continuing Curriculum Item(s) – from 10/25/23

3.1

AMS		Mike Nicholas
CIM 10/09/23		
1 Course Change:	MATH440: PARALLEL SCIENTIFIC COMPUTING	
	Just adding a programming prereq to the class. CS200 is needed since the class is taught in C++ **Question:** What would be the impact on CS200? Is CS ready for that number of students? **Answer:** This course is taken entirely by math majors who must take this course anyway.	

3.2

Geophysics (GP)		Brandon Dugan
CIM 10/12/23		
1 Course Change:	GPGN318: APPLIED GEOPHYSICS I	
	We would like to change from the current format of 3 lecture hours + 3 lab hours per week to 2 lecture hours + 3 lab hours per week. This adjustment will align the course load more accurately with a 3-credit course and, in fact, reflects how the courses are currently being taught. Additional prereq modifications that were not adjusted the last time are being adjusted. Prerequisites ~~MATH213, MATH225.~~ Co-requisites GPGN328. **Comment:** The credit hours are not listed in the catalog description for this course. This will be double checked.	

3.3

Geophysics (GP)		Brandon Dugan

CIM 10/04/23	
1 Course Change:	GPGN319: APPLIED GEOPHYSICS II
	We would like to change from the current format of 3 lecture hours + 3 lab hours per week to 2 lecture hours + 3 lab hours per week. This adjustment will align the course load more accurately with a 3-credit course and, in fact, reflects how the courses are currently being taught. Additionally, previous changes to the prereqs were not completed, so those are updated as well. Prerequisites ~~MATH213, MATH225.~~ Co-requisites GPGN329.

3.4

Geophysics (GP)		Brandon Dugan
CIM 10/12/23		
1 New Course:	GPGN410: MACHINE LEARNING INVERSION IN APPLIED GEOSCIENCE	
	To keep up to date with technology in the field of geosciences, we are adding and modifying curriculum to include aspects of AI and ML. This course presents the fundamentals of formulating and solving inverse problems when the models to be recovered are functions in applied geosciences. The emphasis is on the basic strategies for solving linear and nonlinear inverse problems and on the practical methodologies for constructing models that can be directly used in subsequent simulations and interpretations. The course will cover model construction and uncertainty quantification using Tikhonov regularization, machine learning (ML), and generative artificial intelligence. The course will include the integration of information the data to be inverted and the information in the complementary data that are conceptual in nature. **Question:** What is the pre-req for this course? Do students need to take machine learning ahead of this course? **Answer:** Student do not need to take machine learning before this course. It is designed for students who want to learn the geoscience side and broaden their skill set. **Comment:** There are no credit hours listed for this course.	

4. Adjourn

Meeting adjourned: 5:03 pm.

Next meeting: December 13, 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.