

Colorado School of Mines – UNDERGRADUATE COUNCIL MEETING MINUTES
 October 9, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 19 total (12 needed for quorum). Quorum was present.

P	Ventzi Karaivanov (chair)	P	Erik Menke (CH)	P	Adam Olsen (LB)	P	Rennie Kaunda (MN)
P	Jason Ganley (CBE)	P	Jeremy Suiter (EB)		Gerald Bourne (MME)	P	Mathias Burisch Hassel (GE)
P	Rob Thompson (CS)	P	Ge Jin (GP)	P	Jeff Wheeler (ME)		Eliza Buhner (HASS)
P	Linda Battalora (PE)	P	Hongyan Liu (CEE)	P	Hisham Sager (EE)		Elizabeth Prescott (USG)
P	Jack Bringardner (EDS)	P	Gus Greivel (AMS)	P	Chip Durfee (PH)		

Other Regular Attendees and Guests

	Sam Spiegel (Mines Online)		Vibhuti Dave (UGS)	P	Kristeen Serracino (AA)	P	Paul Myskiw (RO)
P	Karla Perez-Velez (CASA)		Danielle Boileau (CASA)		Cheryl Medford (GE)	P	D. Scott Heath (RO)
	Katie Ludwin (CASA)		Megan Sanders (Trefny Center)		Colin Terry (SL)		
	Luke Contreras (UA)		Julia Cable (UA)				

Special Guest(s): Sandy Woodson, Ali Kerr, Scott Houser, Cadi Gillette

Welcome

Ventzi Karaivanov

Discussions for all courses that are under consideration have been posted in Canvas. A few comments have been added on the CS course and the FUTURES course which will be addressed in this meeting. There will be an update for the Courseleaf software so the discussion posts are a segue to what will be included. Any questions and answers posted in the discussion will be included in the minutes. At the end of the meeting, there will be a motion and vote to enable voting online for the approval of courses that are scheduled to be voted on at the next meeting. This will be utilized through a Canvas quiz. There will be four options – approve, oppose, abstain, and additional discussion required. If additional discussion required is selected, the course will be discussed at the next meeting. All voting results will be acknowledged at the beginning of the next meeting.

Additionally, there has been discussion from faculty about the council meeting format and whether to continue virtually or transition to in-person meetings. This would also apply to the Graduate Council as well. The executive committee created a survey to distribute to all councilors which was sent out via email. Please take this survey so that information can be gathered on preferences of format and time. It has become apparent that some of the physical activity courses need to be updated based on changes voted/approved in relation to the core curriculum a year and a half ago. As part of the core curriculum, all PAGN courses changed from 0.5 credit hours to 1 credit hour but were not implemented through Courseleaf for all courses. A summary will be drafted with these changes, but it is an administrative clean up in the catalog so that 0.5 credits hours no longer show up. Lastly, H. Sager and J. Wheeler have volunteered to serve on both the Core Completion Committee and Minor and ASIs Survey Committee. More faculty volunteers are needed but the committees can start assembling.

Approval of Minutes – September 25, 2024

Ventzi Karaivanov

MOTION: The motion to approve the previous meeting minutes was moved by J. Ganley and seconded by J. Suiter. The motion to approve the previous meeting minutes was approved with 16 approved, 0 opposed, and 1 abstention.



Briefings and Information Items

Registrar's Office

Paul Myskiw

Mines signed an SOW with the vendor of CIM to update to a new version which will allow and facilitate online voting next spring. The new update will also provide the ability to have discussions on votable items and capture how votes are cast. More details on this are to come in the next few months. There will be an announcement coming out from the CIO early next week talking about the official migration to SaaS for the student information system. It is tentatively scheduled for the last week of October. There will be some downtime during that week to Self-Service and Canvas but will hopefully be minimal. Lastly, to address the issue of undergraduate students not completing core courses, the Registrar's Office is working with a few departments to pre-register freshmen who have not completed core courses and build prompts to push students into completing the core early.

- **Question:** J. Bringardner asked if there is a way to put a hold where students must consult with an advisor before dropping a core course?
- **Answer:** P. Myskiw answered that there is an alternate pin that can be assigned which would put a hold that tells students to get advising before registration. There is discussion regarding creating a uniform pin policy as it differs among departments. The concern is that once the hold is removed, students are free to do what they want whether they seek or implement advising or not.
- **Question:** R. Thompson asked if instructors of the core courses will be notified of the pre-registration?
- **Answer:** P. Myskiw answered that it was not a plan but if useful, communication could get sent out to instructors.

Undergraduate Studies

Vibhuti Dave

No discussion at this time.

1 Curriculum Item(s) for Council Vote

Minor Changes – to be considered as a single vote

1.1

HASS		Eliza Buhrer
CIM 9/13		
1 course change:	HASS412: LITERATURE AND THE ENVIRONMENT	
	HASS 412 Literature and the Environment is a regular f2f class listed in the bulletin that will be turned into an online, asynchronous class. Literature and the Environment is the only course at Mines which considers literature as a lens to address environmental issues relevant today. One of the stated goals of Mines@150 is to expand offerings and diversify delivery. Mines and HASS students would gain a better understanding of cultural diversity through the lens of world literature which considers nature and the environment. Their exposure to other cultures and ways of life adds cultural and historical knowledge and awareness of the diversity of human experiences. An online version of the course will thus diversify the delivery of the course and offer students flexibility. FOCD – taken in Summer 2020 Anticipated Date for Completion– March 2025 Anticipated first semester of delivery – Summer 2025 Anticipated date to be open for registration – March 31st 2025	



COLORADO SCHOOL OF
MINES

9 course deactivations:	HASS201: WORKSHOP FOUNDATIONS: THE ART AND CRAFT OF CREATIVE WRITING
	The contents of this course were absorbed into HASS 302.
	HASS221: INTRODUCTION TO RELIGIONS
	Teaching faculty the course has retired.
	HASS286: GLOBAL POLITICS & SOCIETY
	Course no longer taught.
	HASS303: FOUNDATIONS: THE ART AND CRAFT OF CREATIVE WRITING WORKSHOP
	Course content absorbed into HASS 302.
	HASS433: SHAKESPEARE AND THE SCIENTIFIC REVOLUTION
	The faculty member teaching this course retired and we do not have other faculty who can teach it.
	HASS450: POLITICAL RISK ASSESSMENT
	Course no longer taught.
	LIFL114: ARABIC I
	We no longer have the faculty to teach this course.
	LIFL124: ARABIC II
	We no longer have the faculty to teach this course.
	LIMU450: MUSIC TECHNOLOGY CAPSTONE COURSE
	Course no longer taught.

MOTION: The motion to approve HASS minor changes was moved by J. Ganley and seconded J. Wheeler. The motion to approve HASS minor changes was approved with 15 approved, 0 opposed, and 0 abstentions.

1.2

EB		Jeremy Suiter
CIM		
3 new courses:	EBGN397: GLOBAL BUSINESS EXPERIENTIAL LEARNING	
	Expanding business education opportunities of Mines students.	
	EBGN447: FINANCIAL RISK MANAGEMENT	
	Elective course in Business Engineering and Management Science degree program.	
	EBGN458: DECISION ANALYTICS	
	Elective courses in Business Engineering and Management Science degree program.	

MOTION: The motion to approve EB minor changes was moved by J. Suiter and seconded J. Wheeler. The motion to approve EB minor changes was approved with 15 approved, 0 opposed, and 1 abstention.

2 Continued Business

CS	Rob Thompson
CIM 9/17	
2 new courses:	CSCI413: ADVANCED DATA SCIENCE
	<p>How will this course specifically advance Mines@150 Mission, Vision and Strategic Plans?</p> <p>We are upgrading the current CSCI 303 course by introducing both 400-level and 500-level CSCI designations. This update involves a comprehensive revamp of the course materials, sequencing, and pacing, along with a stronger emphasis on more complex thinking. Additionally, the new course will require a deeper focus on research and hands-on practice with computational challenges relevant to data science.</p> <p>In addition to allowing our computer science students to take this new course as a 400-level elective and explore solutions to computational challenges related to working with data, the interdisciplinary nature of the course will provide them with the opportunity to collaborate in diverse groups of students from various fields.</p> <p>This initiative supports the Mines@150 mission by fostering a strong relationship with the interdisciplinary data science program, certificates, and graduate students. Specifically, it aligns with the goal of 'expanding our offerings and diversifying delivery, particularly for professionally oriented pre- and post-graduate education.'</p> <p>Provide detail about how the course will be delivered: Residential (less than 50% of course delivered online) or Online.</p> <p>The course will be delivered in-person, residentially.</p> <p>Notes: there is currently an in-person and online version similar to this (DSCI 503) that has been developed during the summer of 2023. The course, learning outcomes, and overall content was reviewed closely and approved through Mines online. The big difference is the students in the CSCI version will have a “computational challenge project” and additional expectations within the research component of the project(s).</p>
	CSCI421: INTRODUCTION TO HUMAN COMPUTER INTERACTION
	<p>HCI is a subfield of Computer Science that is respected, large, and still growing. It is also currently entirely unrepresented both within the CS department and the university as a whole.</p> <p>This course advances the vision of Mines@150 by expanding and modernizing the topics made available for study at the undergraduate level. HCI as a topic also represents a unique synthesis of principles from cognitive and social sciences with computer science; one that emphasizes the potential for cross-disciplinary work within CS.</p>

- **Question:** J. Wheeler asked is the intent of this new course to replace CSCI303 long term? If so, would this be a suitable class for non-CS majors to take as an elective? Also, would it be appropriate for any program referencing CSCI303 to update its requirements to reference CSCI413 as a replacement or is there a more suitable course to replace CSCI303 with?
- **Answer:** R. Thompson answered that it would likely be appropriate. CSCI303 is splitting into two new courses – CSCI403 and CSCI413. CSCI413 is intended more for non-CS majors as it has simpler prerequisites

- **Question:** G. Greivel asked is the direct logical replacement CSCI303 in the AMS Data Science track going to be CSCI413? Also, now that it is moved to a 400-level course, is linear algebra expected as a prerequisite?
- **Answer:** R. Thompson answered the planned non-majors replacement to CSCI303 is DSCI403 which was approved last year. The Physics department would be directing their students to either DSCI403 or CSCI413, depending on which seems like a better fit. For the linear algebra prerequisite, R. Thompson will bring this question to the department.

2.2

HASS		Eliza Buhrer
CIM 9/17: Provost 9/17		
1 new course:	HASS462: AMERICA DECLASSIFIED: THE SECRET HISTORY OF INTELLIGENCE	
	Mines@150 envisions students who are able to learn and adapt in a world where information and socio-technical innovation happens at unprecedented speed. For students to make sense of this world, they must be able to assess critically competing claims of truth and contradictory evidence. They must be able to seek out and make sense of new information constantly. And they must develop skills to understand their contemporary environment and anticipate future change. All of these core skills just happen to lie at the heart of the craft of intelligence. This course uses an item of innate fascination – the world of spies and lies – to engage students in the world around them, to develop their skills as analysts and communicators, and to build their information literacy. It also applies the insights of historical thinking to contemporary and future problems.	
HASS		Eliza Buhrer/Sandy Woodson
CIM 9/24: Provost 9/25		
1 new course:	HASS215: FUTURES	
	<p>Justification for Request (How will Mines@150 mission be advanced?):</p> <ol style="list-style-type: none"> 1. Expand offerings and diversify delivery—this is the new signature student experience in the Mines Core. 2. Encourage interdisciplinarity collaboration by incorporating different intellectual approaches from a variety of disciplines . 3. Strengthen affinity for Mines among our students, alumni, faculty, researchers, and external partners 4. Lays the groundwork for differentiated and highly desired STEM-educated leaders <p>FUTURES invites students to envision possibilities around critical issues related to the future of science and engineering. It is central to the Mines core curriculum and encouraged during the first years at Mines. Guided by four instructors who share perspectives from a wide range of humanities, social science, and applied disciplines, students will explore future-oriented themes at the forefront of advances in science, engineering, technology and society, such as Energy Futures, Technology Futures, and Critical Resource Sustainability, among others. By the end of the course students will gain skills in integrating multiple</p>	

	perspectives and connecting them to their own interests and trajectory at Mines and beyond.
--	---

- **Question:** C. Durfee posted the following question in Canvas: 1. The pilot version of FUTURES includes an all-day field trip, and the students in FUTURES are getting university excused absences from their other classes. The pilot version of the course is small enough that this represents only a minor administrative burden, but if every student on campus is taking FUTURES, then every class that occupies a similar spot in the curriculum will effectively lose a full day of instruction to FUTURES's extracurricular activities. And that's the best-case scenario - most recently, FUTURES had a third of their students gone on each of three different days. If that was scaled up to all students, PHGN100 and 200 (and calc, chem, etc) could see so many students gone as to cripple their operations on multiple days per semester. From one of our intro physics teachers: "This field trip has created a bit of chaos in both PHGN 100 and 200 —just a lot of absences to deal with (and were not issued in a way that's easily trackable). Students have told me that the alternative is a required one-hour activity on-campus, which seems far more reasonable than a 7:30 am to 5:30 pm commitment during a school day. I have a few students who are telling the Futures faculty that I'm highly encouraging them to take the quiz in class (I'm not actually because I have no ground to do so since they have excused absences) because they really don't want to miss their classes for an entire day before fall break. The students I've chatted with also are not happy to be missing their classes for a field trip." 2. A second question has to do with how this course is staffed. "Each of the current 4 pilot sections has ~100 students enrolled. And each of the 4 pilot sections has 4 faculty involved. If FUTURES becomes a required core course with 1600 incoming first-years, that'll be 8 sections in the fall and 8 sections in the spring, and 64 instructional spots needed. My understanding is that they will be looking for interested faculty from all departments to participate in the delivery of FUTURES, though I am not sure exactly to what extent, or how they are proposing to count the credit hours. This may not be possible given how thin current resources are already spread. For example, let's say I love the idea and decide to teach exclusively in FUTURES. That would leave our department in a bind to cover our internal curricular responsibilities with existing faculty." Along similar lines: "The long-range plan is to have 1,600 students in the course each semester. Faculty delivering the course sections will be "borrowed" from various departments. There is currently no plan to hire adjuncts to teach the course, so individual departments will have to share the burden. I believe there are also no plans to provide course faculty any sort of financial support to prepare for the course, or to develop new course "themes" as the course evolves, through summer salary support, or winter research support, or any sort of course release. I would be very uncomfortable asking any faculty member to teach anything "cold" with very little authentic support or preparation."
- **Answer:** S. Woodson answered not all the courses have the all-day field trip. Some of the Encounters are on campus so it will not be all students all the time. Also, there is no fine tuning with the excused absences. Even though students will be gone in the morning, it is considered the whole day. Perhaps there is a way to make that part better so that students won't miss the entire day. The field trip is only scheduled for one day in the entire semester, but it is a concern. There will be an alternative assignment offered to students who cannot attend the field trip. We will work on a workaround for students to not cause any additional stress on students and faculty.
- **Comment:** G. Greivel added that it might be worth connecting with course coordinators to ensure that a large number of students are not missing a labs such as Chem I or Chem II.
- **Comment:** A. Kerr added that off-site field trips only happen in one or two classes. Multiple days are given to the students to choose from based on their availability to provide as much flexibility as possible and identify students that cannot make it. Also, these are only scheduled between

weeks 6 and 11 so there will be ample opportunity to pair up with the major classes/labs. Field trips are already not scheduled around common exams.

- **Comment:** C. Durfee added that maybe there is a way to have a conversation sometime early on with instructors who are teaching introductory courses with a large number of students to identify particular dates that may be easier to work with.
- **Comment:** A. Kerra added that during the 1st week, students are asked which days work best for them to target availability early. Encounters are also spread out over multiple alternative options for the students to alleviate some of the impact.
- **Answer:** S. Woodson answered that FUTURES has been assured that hires will be forthcoming and more faculty from STEM departments will participate. For Fall, two CAS teaching faculty were hired. There will be 32 slots to be filled by full-time faculty (not adjuncts). Of those 32, 8 would be from STEM departments and 24 from CAS departments. Currently, there are four sections being taught by HASS mostly, but are distributed among HASS (7), EDS (4), EB (4) and STEM (1). This is a great course, and administration has promised resources in the future. However, in the short term, it has been a challenge especially since this is taught by teaching faculty not adjuncts.
- **Comment:** S. Houser added that this will be a challenge. Fall of 2025 is staffed but there would need to be the same level of staffing for Spring 2026. This course is a signature student experience, so it is resource intensive.
- **Comment:** C. Durfee added that in some departments, there is only enough staffing to teach classes within that department. Any additional load would need to come with some way to manage existing schedules and it is not clear how that will be handled.
- **Comment:** J. Suiter added that as someone who has taught two of the seminars, he is excited about this course. However, there is concern about resourcing as there is not a lot of slack in the existing teaching loads to support this many slots. Instead of two faculty, seven full-time teaching faculty are needed. Is there any sense of a timeline on when some resource commitment will be forthcoming for staffing this? Is the plan to lean heavily on adjunct backfill?
- **Answer:** S. Woodson answered that there has not been any communication as to when more hires would be available as a resource. It will be heavy leaning on adjunct backfill and deploying more faculty across campus.
- **Question:** J. Wheeler asked if it is possible to increase the size of the section?
- **Answer:** S. Woodson answered that it has increased from 75 to 100 students already. S. Houser answered that this creates a 25:1 student faculty ratio, and we cannot go much higher than that.
- **Question:** H. Liu if this course is successful, will it be introduced into the core curriculum or additional to HASS200?
- **Answer:** S. Woodson answered that it is being introduced as part of the core now and be either this course or HASS200. Eventually, the plan is to have this course replace HASS200.

2.3

EB		Jeremy Suiter
CIM 9/18		
1 course change:	EBGN310: ENVIRONMENTAL AND RESOURCE ECONOMICS	
	Since EBGN201 is no longer in the core, we are removing the prerequisite for some of the 300-level economics courses that can be used to satisfy the CAS elective credit. The relevant learning outcomes from EBGN201 will be introduced and integrated into this course.	

4:45-5:00 pm

3 New Business

3.1

AMS		Gus Greivel
CIM 9/26		
2 course change:	MATH310: INTRODUCTION TO MATHEMATICAL MODELING	
	We are refining the AMS Computational and Applied Mathematics Modeling Sequence (MATH310, MATH431, and MATH484) to better scaffold modeling concepts as students progress through our curriculum. Topics are being organized to focus on discrete time mathematical models in MATH310, continuous time mathematical models in MATH431, and continuous time models with spatial variables in MATH484. We are also cleaning up the prerequisite structure within this sequence. Remove CSCI128 as a prerequisite.	
	MATH431: MATHEMATICAL BIOLOGY	
	We are refining the AMS Computational and Applied Mathematics Modeling Sequence (MATH310, MATH431, and MATH484) to better scaffold modeling concepts as students progress through our curriculum. Topics are being organized to focus on discrete time mathematical models in MATH310, continuous time mathematical models in MATH431, and continuous time models with spatial variables in MATH484. We are also cleaning up the prerequisite structure within this sequence.	

- **Question:** V. Karaivanov asked is MATH310 a prerequisite for MATH431?
- **Answer:** G. Greivel answered it is or BIO300 plus linear algebra and scientific computing.

3.2 Minor Changes – to be considered as a single vote

HASS		Sandy Woodson
CIM 9/23		
1 new course:	HASS420: SPECULATIVE FICTIONS: CREATIVE WRITING, SCIENTIFIC INNOVATION, AND THE FUTURE	
	This course is designed to expand upon the themes and skills introduced in the HASS core classes (Nature and Human Values and Global Futures) and contribute to the achievement of the CSM Mission Statement through “the creation, integration and exchange of knowledge in engineering, the natural sciences, the social sciences, the humanities, business, and their union.” While maintaining a primary focus on the themes and the craft of writing and the evaluation of writing, this class also incorporates substantial amounts of information drawn from contemporary writing masters and scholars in order to present a comprehensive view of the major patterns of literature. It has been demonstrated scientifically that reading and experiencing literature improves empathic behaviors, which puts this class in line with the goals from the Strategic Plan, “The Mines student graduates with a strong sense of integrity, intellectual curiosity, demonstrated ability to get a job done in collaborative environments, passion to achieve goals, and an enhanced sense of responsibility to promote positive change in the world.” Upon completion of the course, students will possess a more comprehensive understanding of the way understanding literature helps	

	us understand the world, and synchronizes with ABET goals of, “communicating effectively,” “Recognizing the need for, and an ability to engage in life-long learning,” and sets them up to better apply “knowledge of contemporary issues.” Literature and Writing courses set students up to apply the “broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context” as defined by ABET, and this course will be essential to the HASS Department goals of, “prepare[ing] people to live and work in a complex, dynamic world; understand the meaning and implications of "Stewardship of the Earth"; and communicate effectively in written and oral forms	
ENERGY		Paulo Cesar Tabares Velasco
CIM 9/25		
1 new course:	ENGY450: FUNDAMENTALS OF SOLAR ENERGY ENGINEERING	
	Solar energy is an important and growing component of our energy system. Solar Energy can not only reduce greenhouse gas emissions and global warming, but distributed generation can also save homeowners, businesses, and industry considerable amounts of money through utility cost savings. As opportunities for solar energy grow and consequences of fossil fuel use mount, we must evolve from goals based on solar electric capacity (MW) and production (MWh), to consideration of exactly where and when those MW of solar power are delivered and the resulting effect on the overall energy system. And in order to save the planet, we must also expand our scope into thermal energy to displace fuels and solar energy to meet transportation requirements.	

- **Question:** V. Karaivanov asked if the Physics course will be deactivated?
- **Answer:** P. Cesar Tabares Velasco answered he is not sure if it has been deactivated. This course has been taught a few times as a special topics course.

AMS		Gus Greivel
CIM 9/26		
1 course change:	MATH484: MATHEMATICAL AND COMPUTATIONAL MODELING (CAPSTONE)	
	We are refining the AMS Computational and Applied Mathematics Modeling Sequence (MATH310, MATH431, and MATH484) to better scaffold modeling concepts as students progress through our curriculum. Topics are being organized to focus on discrete time mathematical models in MATH310, continuous time mathematical models in MATH431, and continuous time models with spatial variables in MATH484. We are also cleaning up the prerequisite structure within this sequence. Remove MATH307 as a prerequisite.	
CBE		Jason Ganley
CIM 10/3		
1 course deactivation:	CBEN308: HEAT TRANSFER	
	CBEN 308 has been replaced with CBEN 314 in the undergraduate catalog and the grad catalog needs to be updated accordingly to avoid confusion.	

Additional Discussion

MOTION: The motion to start the voting process for courses that are due to be approved in the next meeting (10/23) was moved by G. Jin and seconded by H. Sager. The motion to approve the new voting process was approved with 12 approved, 0 opposed, and 1 abstention.

5:00 pm

Adjourn at 5:13 pm

Ventzi Karaivanov

Next meeting: October 23, 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.



**COLORADO SCHOOL OF
MINES**