Colorado School of Mines – FACULTY SENATE MEETING AGENDA
February 14, 2:00 – 4:00 pm, Guggenheim Boardroom via Zoom

_____

<u>Time</u>	<u>Item</u>	<u>Presenter</u>
	Information Session	
2:00-2:05 pm	**Welcome**	Jeff King
2:05-2:10 pm	**Approval of Minutes** (January 24, 2023) and **Adoption of Today's Agenda**	Jeff King
2:10-2:15 pm	**Appointment of New Senator**	Cristian Ciobanu
2:10-2:15 pm	**Academic Affairs Announcements**	Rick Holz
2:15-2:20 pm	**Registrar's Office Announcements**	Paul Myskiw
2:20-2:45 pm	**Committee Reports** *Teaching Workload Committee* *Bylaws and Rules* *Core Curriculum* *Faculty Contracts* *Budget Report*	Brandon Dugan Jeff King Joe Horan Todd Ruskell Cristian Ciobanu
2:45-2:55 pm	**Council Reports** *Undergraduate Council* *Graduate Council* *Research Council*	
2:55-3:05 pm	**Briefings, Informational Items, and Updates** *Student Life – Core Curriculum*	Colin Terry
3:05-3:15	**Open Announcements** *President will open floor to announcements*	
	Business Session	
3:15-3:25 pm	**Confirmations and Appointments**	Cristian Ciobanu
3:25-3:30 pm	**Senate Business** *Faculty Workload Ad Hoc Committee*	Jeff King
3:30-3:35 pm	**Committee Business**	Jeff King
3:35-3:45 pm	**Undergraduate Council**	Joe Horan

Core Curriculum Item(s) for Senate Vote – Appendix A
Core Curriculum Item(s) for Senate Presentation – Appendix B
Curriculum Item(s) for Senate Presentation – Appendix C

3:45-3:55 pm	**Graduate Council**	Tina Voelker
	HLC Combined Program Changes – Approved GC 2/1	Tim Barbari
	Curriculum Item(s) for Senate Vote – Appendix D	
	Curriculum Item(s) for Senate Presentation – Appendix E	
3:55-4:00 pm	**Open Floor**	Jeff King
	President will open floor to motions	
4:00 pm	**Adjourn**	Jeff King

Next meeting: February 28 from 2:00-4:00 pm in the Guggenheim Boardroom and Zoom webinar. Please send agenda items to Mara Green (mgreen1@mines.edu) 1 week prior.

<u>*Appendix A*</u>
<u>*CORE Curriculum Item(s) For Senate Vote*</u>

1.1   **COMPUTER SCIENCE**
             [CIM 1/4; Provost 1/5; UGC 1/25]
             1 new core course: CSCI128: COMPUTER SCIENCE FOR STEM
             This course is considered part of the new Mines Core, and thus designated an essential class for all students studying at Mines. Increasingly each year, our society relies on computing technology to accomplish daily tasks. This is even more true for scientists and engineers in STEM fields. However, simply knowing how to use computers is not enough. Capable professionals must also know how to program computers to make the best use of them. This course will teach the basics of computer programming, targeting students with no prior experience. It will teach fundamentals that are necessary to program in any language, as well as data analysis techniques that will be applicable to all STEM students, regardless of their intended major. This is a residential course, meeting in-person 3 times each week.

<u>*Appendix B*</u>
<u>*CORE Curriculum Item(s) for Presentation*</u>

2.1   **COMPUTER SCIENCE**
             [CIM 1/4; UGC 2/1]
             1 program change: BS-CS: BS in Computer Science
             Restructuring degree to align with new Mines Core curriculum.

2.2   **PHYSICS**
             [CIM 1/16; UGC 2/8]
             2 core course changes: PHGN100: PHYSICS I – MECHANICS
                                         PHGN200: PHYSICS II – ELECTROMAGNETISM AND OPTICS

PHGN100 & 200 reduction of credits from 4.5 to 4.0. Has been approved by the Physics Department Undergraduate Council and by the Physics Department Faculty. This is part of the revision of the core curriculum.

Appendix C
NON-CORE Curriculum Item(s) for Presentation

3.1 **APPLIED MATHEMATICS & STATISTICS**
[CIM 12/14; UGC 2/1]
1 program change: BS-AMS: BS in Applied Mathematics and Statistics
This is a small change for the Computational and Applied Math major. We are adding MATH324 to the list of required courses and removing MATH335 from that list. The feeling is that if a CAM major takes just one of these, MATH324 is more practical. We will include MATH335 on the elective list.

3.1 **COMPUTER SCIENCE**
[CIM 1/4; UGC 2/1]
4 program changes: MIN-COMPE: Minor in Computer Engineering
Adding new CSCI 210 Systems Programming course to list of courses
                MIN-DSCI: Minor in Data Science
Updating responsible faculty. Add CSCI 478 Bioinformatics to list of courses
                MIN-RIS: Minor in Robotics and Intelligent Systems
Replace Intro to Stats with Intro to Prob
                MINASI-CS: Minor in Computer Science
Deactivating ASI. Currently zero students enrolled and ASIs are rarely utilized across campus. Further, due to prereqs a student completing the existing ASI would need 1 more course to complete the minor. Second version of minor being rolled into Minor in Computer Engineering.

3.2 **ECONOMICS AND BUSINESS**
[CIM TBD; UGC 2/1]
1 program change: BS-BEMS: Business Engineering and Management Science
The data science and business analytics core for the BEMS degree was originally constructed with classes that already existed in the Department of Economics and Business or elsewhere on campus. Now that the department has additional faculty depth in business analytics, the department wants to make sure that it is providing our students with the sequence of courses that will best serve their needs. Course proposals for the classes below have been submitted to CIM, and once those are approved, the program changes will be submitted to CIM.

3.3 **ELECTRICAL ENGINEERING**
[CIM TBD]
1 program change: BS-EE: BS in Electrical Engineering
Electrical Engineering Department - Emphasis Area Removal
An analysis of the emphasis areas within the department reveals that approximately 70% of our students do not select an emphasis area and instead pursue our general electrical engineering program. Supporting these emphasis areas places a high teaching demand on our small faculty. The department unanimously supports the removal of

emphasis areas. Emphasis areas will be converted to pathways for students to identify specialty areas for study.

3.4　　　**ENGINEERING, DESIGN, AND SOCIETY**
　　　　[CIM 12/21; UGC 2/1]
　　　　1 program change:　　MIN-LSR: Minor in Leadership in Social Responsibility
　　　　Update to course elective list for LSR minor. The Engineering for Community Development HE minor in EDS also lists elective courses which should be consistent between the two offerings.

3.5　　　**QUANTITATIVE BIOSCIENCES AND ENGINEERING**
　　　　[CIM 12/15; UGC 2/1]
　　　　1 program change:　　BS-QBE: BS in Quantitative Biosciences and Engineering
　　　　Update to technical electives list. Requested by L. Salinas 12/14/22
　　　　Updated field session placeholder in Summer Junior year - MG 12/15/22

Appendix D
Programs for Senate Vote

4.1　　　**ENERGY**
　　　　[CIM 11/9; GC 1/18]
　　　　1 program change:　　MSPHD-AES: MS and PhD in Advanced Energy Systems
　　　　AES is cleaning up the catalog language, clarifying course/credit requirements and clarifying PhD requirements.

4.2　　　**MINING**
　　　　[CIM 11/14; GC 1/18]
　　　　1 program change:　　MP-MEM: MP – Mining Industry Management (MP-MIM)
　　　　This program has been proposed and approved as an online program, and it is heavily focused on management aspects of the mining industry. It has quickly gained reputation in the first round of offering, making it to the top 25 technical professional masters programs in the US. We have had several applicants that do not have an Engineering background who want to enter the program, and since the contents are not very technical, they could be successful. But with the name Engineering in the title, students without an Engineering degree would be granted one in this program, and the MN faculty did not see that to be appropriate. So, with the change in name, we also propose changing the entry requirements and making the program available to all Mining and other Engineers, as well as to those who have worked in other disciplines in the mining and minerals industry for at least five years. Also, the original program was a block model with all 33 credit hours prescribed, and we are changing it to allow up to two elective courses (6 credits) to be taken. This will offer flexibility to the student to take some other online courses to become more specialized in certain areas or to opt out of topics in which they already have competency. This also allows students to tap into other online content that Mines has to offer and is attractive to them.

5.1   **PHYSICS**
              [CIM 12/13; Provost 12/13; GC 1/18]
              1 new program: MSNT-PH: Master of Science (non-thesis) Applied Physics
                                         Addition

The addition of a non-thesis MS program to our Physics program aligns with the goals of Mines at 150, in particular

- *Be a top-of-mind and first-choice university for students, public and private partners, and faculty and staff.*
- *Expand offerings and diversify delivery, in particular for professionally oriented pre and post graduate education.*
- *Grow the scale and impact of research, focus on thematic strengths, develop a more social research culture, diversity funding sources.*

The non-thesis program can offer our combined students a more accessible method to get a MS degree in Applied Physics

5.1.1   [CIM 12/13; GC 2/1]
              1 program change: MSPHD-PH: MS (with thesis) & PhD – Physics
Our new Graduate laboratory course is designed to provide first year graduate students with introductory skills necessary to carry out research in discipline specific laboratories – both in the physics department and post-graduate career industrial settings. Graduate laboratory is one step toward the goal of modernizing the Physics graduate curriculum, both content and pedagogy, and to target requirements of employers. In this effort, Classical Mechanics has been partially 'absorbed' into the other four core courses: Quantum Mechanics, Electricity and Magnetism, Statistical Mechanics, and Mathematical Methods. These four courses are, in turn, being integrated to avoid artificial siloing of information. In addition to providing students a rich, interactive learning experience, the new graduate laboratory course is intended to grow the scale and impact of research at Mines. Engaging first year graduate students in real-world research will better prepare them to join broader research communities and contribute at an earlier stage in their careers. Success of the revised physics graduate curriculum will further Mines' goal to be a top-of-mind and first-choice university for students, public and private partners, and faculty and staff.

5.2   **APPLIED MATHEMATICS & STATISTICS**
              [CIM 12/12; GC 2/1]
              1 program change: MSPHD-AMS: MS & PhD – Applied Math/Statistics
AMS recommends to revise the CAM graduate core coursework by removing MATH 515 from the required core coursework, instead offering 515 as one of the electives students may choose to take, and adding MATH 501 to the required core coursework. This will

ensure that all CAM graduate students have a well-rounded theoretical skillset to complement their skills in mathematical modeling, calculations, and numerical methods.