Faculty Senate Minutes

5/3/2018
2 p.m.– 4:00 p.m.
Highlands College room 123

Attendance: Charie Faught, Scott Risser, Jackie Timmer, Tony Patrick, Atish Mitra, Chad Okrusch, Miriam Young, Phil Curtiss, Stella Capoccia, Vickie Petritz, Matt Egloff, Ron White, Courtney Young, Dave Gurchiek, Doug Abbott

I. Welcome and Minutes- Motion to approve 4/19/2018 meeting minutes and seconded. Minutes approved.

Action Items

II. Emeritus Recommendation

a. Douglas Coe- see agenda attachment

Has been at Montana Tech for 34 years. Motion to approve and seconded. Motion passes.

b. Grant Mitman- see attachment

Came and gave lecture on home solar energy for an energy class. Discussed concern that the item not being on agenda (currently no opportunity to speak to departments). The submission does warrant a discussion. Question regarding the "Department of Research", response that it is from the Dean of Research. Concern of potentially not having the correct department. Motion to withdraw at this time. Question of who is also considered Research Faculty (only one at this time, who is retiring). Review of Faculty Staff Handbook, issue of the department forwarding this request.

III. CRC Recommendations – see agenda attachments

a. Minutes and (SME) Petroleum Engineering Class

b. (HC) Add courses in Math, Surveying, and Cybersecurity; modify courses in Construction; modify Web Development and Administration AAS; and add certificate in Land surveying

c. (CLSPS) Changes to Business courses, Health Care Informatics major, Business and Information Technology major, Computer Sciences major, and Biological Sciences minor. Additionally, add certificate in "Landman" and Bachelors of Nursing completion program (post licensure).

Comments on a-c. Math 140 has been pulled from Highlands College submissions. Completion program changes for nursing (not adding as a new program). Land Surveying will be heading to BOR as an informational item only (no need for approval). Working with Civil Engineering for the surveying component (may wish to speak with other departments). Motion to approve a-c and seconded. Motion passes.

d. CRC addition of Metallurgical and Materials Engineering- see attachment. Part of changes are administrative, but passed at CRC on April 5th. Language in the catalogue regarding the tracks have been resolved. Consult with Leslie Dickerson took place for new catalogue language. Motion to approve and seconded. Motion passes.

IV. Graduate Council Recommendation for Catalog Change – see agenda attachment-

Applies to undergraduate programs greater than 128 credit. Comment that it may water down each program. Concern that it creates a lower credit Master's program. Item was discussed and passed at last CRC meeting. Individual departments would not have to opt in (can make individual program choices). Comment that students who have completed the 128 credits can apply additional credits to graduate school. Comment that should wait for Graduate Dean. Comment that other schools have similar policies. Graduate Council have been discussing for several meetings.

Recommendation to pass, as it does have an opt-out provision for individual departments. Comment that academic structure does change, and the ability to have a Master's in a shorter period of time may be an opportunity. Comment that Master's degree now the standard for some degree areas. Motion to table and seconded for Dean Hartline to discuss the recommendation. Motion fails. Motion to move forward to pass and seconded. Motion passes.

Informational Items

V. Committee updates:

a. Program Prioritization Committee

Two meetings have occurred since the last faculty meeting. The earlier meeting had additional academic metrics, with no conclusion or recommendations at this time. The academic discussions will move forward in the fall, based on individual colleges. For the summer, the committee will switch gears to non-academics by Vice Chancellor, with questions regarding less resources and more resources.

Comment that summer salary for those not department heads is bothersome, due to budget constraints. Comment that since not under financial exigency, should not be a dire concern. Concern that teaching is primary concern, with a lot of bureaucracy. For example, Tech uses people for advising, when a program can be used. Comment that efficiencies and opportunities are being discussed. Comment that spending money more intelligently by department is also being discussed (in one faculty senator's department).

Comment that faculty have not been laid off at this time, and nowhere near financially exigency. Comment that we do not have more administrators in the last ten years. Comment that staff have been laid off.

c. WIRE

Meeting over the summer to determine the relationships between the colleges (Highlands, CLPS, SME). Recommendation of name has been sent to the Chancellor. Work most likely will continue in the fall, such as general education, internships, and increase Masters programs.

Discussion Items

VI. Teaching Innovation Grants – see agenda for language.

Comment of having great ideas for improvement, but no resources to implement. One model was looked at, including the MSU model, with grants available. The concept is that the grant will be timed to coincide with capital equipment requests, which are now required to have student involvement. Proposal language has been developed. Potentially funding is from capital equipment money. The method might be a way to review outside of departments on a more global scale with student involvement. Question about how it will be measured and how will the results be disseminated. Comment that an IT purchase project occurred without being used (metrics and outcomes may be of benefit). Comment of liking the concept. Comment that something might be innovative if not being done in an instructor's class (innovative in an individual's class). Comment that vendors often willing to provide equipment. Scott Risser, Phil Curtiss and Chad Okrusch willing to form a subcommittee to discuss further.

VII. Senate meeting times for Fall 2018

Finding times have been difficult. Looking to have a group look and propose times for next fall, which should be set for the first week. Phil Curtiss, Courtney Young, and Stella Capoccia willing to participate in scheduling subcommittee. Comment that may include outside of business hours as part of the discussion. Consideration for once every two weeks, and leaving a half an hour for transportation. Also would advocate for carpooling. Comment that would prefer later in

the afternoon as opposed to a weekend. Potentially that Thursday afternoons might be the most well attended (which conflicts with speaker series). Quorum will be 13, but 16 or 17 would be preferred.

VIII. Other Items

Faculty Survey Results-

Currently we have more than enough submissions to show a good sample size, though some did not complete all questions. We will be going over the results in the fall to see what we should do and changes we may want to see. In previous years have taken the whole survey and how things have changed (after submissions to individuals and full reports to the Commissioner and the Chancellor). Not all the comments have been released for each administrator to the faculty, and instead provided feedback.

Comment to caution communicating all the raw data. The critique should be constructive rather than hurtful. Comment that concern is about anonymity, may not get as much participation if people knew the actuals were released. Can also choose to have those see the data by request. Concern of making raw data available, as it may be disseminated. Will see as an action item in the fall to disseminate the data at that time.

Comment that prefer to start over the summer to compile report for the Chancellor (which was the past process).

Comment about changes of faculty staff handbook from a previous meeting. Question regarding forming a committee to review the faculty staff handbook. Comment that was done at least twenty years ago, with little change from faculty since that period time. HR changes last year took place. Are requesting for faculty senators to determine if anyone is interested.

Meeting adjourned.

Mitman Emeritus Nomination

Pat Munday

02 May 2018

To: The Montana Tech Faculty Senate

Re: Professor Emeritus request for Dr. Grant Mitman

ITEM: Authorization to Confer the Title of Professor Emeritus of Research; Montana Tech of the University of Montana

THAT upon his retirement from the Department of Research at Montana Tech of the University of Montana, the faculty wishes to express its appreciation to Professor Grant G. Mitman for his 24 years of dedicated service by recommending that the rank of Professor Emeritus be conferred on him by the Board of Regents of the Montana University System.

EXPLANATION Dr. Mitman received his B.S. in Marine Environmental Biology from the University of Massachusetts-Dartmouth in 1980 (*cum laude*). After receiving his Bachelor's degree, he entered graduate school in 1980 at the Oregon State University where he received his M.S. in Botany and Plant Pathology in 1983. His Thesis was "Development, Reproductive Morphology and Cytology of *Halosaccion glandiforme* (Gmelin) Ruprecht (Rhodophyceae, Palmariales)". Dr. Mitman became a doctoral candidate at Dalhousie University (Halifax, Nova Scotia) in 1984 and took the Ph.D. in 1992. His dissertation topic was "Meiosis, Blade Development and Sex-Determination in Porphyra umbilicalis (L.) J. Agardh from Avonport, Nova Scotia Canada".

Dr. Mitman worked as a Biology Professor during his career at St Mary's University (1988-90, Halifax, NS), St. Francis Xavier University (1990-93, Antigonish, NS), American International University (1993-94, Springfield, MA) and was an Adjunct Professor of Medical Microbiology-Destiny University Medical School (2006-11, St Lucia). He joined the Biology faculty at Montana Tech in 1994 and taught numerous courses in Biology, advised students, and both chaired and served on numerous graduate research committees, and other committees. He also chaired Faculty Senate, Chaired Coalition of Union Faculty, and served as President of Montana Tech Faculty Association. He left the Department of Biology and Joined the Research Department in 2015 until his retirement.

Dr. Mitman worked as an Assistant Professor of Biology during his years with St Mary's University (1988-90, Halifax, NS), St. Francis Xavier University (1990-93, Antigonish, NS) and American International University (1993-94, Springfield, MA). In 1994 he joined the Biology Department at Montana Tech and taught diverse courses in biology, advised students, chaired and served on numerous graduate research committees, and sereved on other committees. Over the years he chaired the Faculty Senate, Coalition of Union Faculty, and served as President of the Montana Tech Faculty Association. For some years, he also served as an Adjunct Professor of Medical Microbiology with Destiny University Medical School (2006-11, St Lucia).

Throughout his service to Montana Tech, Dr. Mitman has been active in research pertaining to use of algae for mine waste bioremediation and has published peer-reviewed articles and EPA reports in this area. His work and research methods are frequently cited in documents pertaining to Superfund remediation and restoration activities in the Butte area. His latest research project has been "Moss Revegetation, A Process to Initiate Restoration and Repair of Natural Resources Damaged by Mining that Impact Butte Area One", funded by the Butte Natural Resource Council/Montana Natural Resource Damage Program. After his retirement, Dr. Mitman intends to continue this research with moss and low pH nitrogen fixation through his company Bioviridescence Environmental LLC.

For these and other contributions, the Board of Regents of Higher Education is pleased to confer upon Grant G. Mitman the rank of Professor Emeritus of Research at Montana Tech of the University of Montana.

MontanaTech *Curriculum Change Request Form Dated 2 Feb 2017*

Protocol: The department requesting curriculum change holds a discussion at the departmental level, and if agreed upon by the department head, discuss with the Dean for approval. Forward the completed form along with supporting information to the CRC chair after approval from the department head, dean, and graduate council if necessary. Final changes are then made by the registrar after faculty senate approval. Guidance: https://www.umt.edu/provost/faculty/curriculum/default.php.

Date 02/18/18
Dept. M&ME **College** SM&E
Program: Metallurgical & Materials Eng
Description of Request/Summary: Eliminate 5 credits of courses in the 2nd Semester of the Freshmen Year and require 6 credits of existing courses in the Senior Year. To do so, the curriculum predominantly returns to where it was before the FEY was changed ~4 years ago. The current request essentially moves some classes forward a year so that they can respectively remain in the Fall/Spring Semesters as needed while others are moved only one semester as needed. To account for the 1-credit differential, a technical elective is reduced from 3 to 2 credits. One course is accordingly renumbered and one course is moved later. Because the existing courses came from the tracks, the tracks were modified. Finally, one course is removed from the catalog.

Current Course Program Information: The current program is shown in the attachment. The attachment shows which courses are moved and thus offers an easy comparison to the proposed program.

Proposed Change (Attach syllabus or curriculum for new course or curriculum changes.)

Course # Name	Credits	Pre-req.
SEE ATTACHED.		

List of supporting documentation attached:

1. Track Changes and Course Cancellation
2. Comparison of Current and Proposed Program which illustrates the request
3. Catalog Changes

Assessment Leading to Request
Meetings with M&ME Students, M&ME Dept, and SM&E Dept Heads/Dean, all unanimously approved.

Anticipated Impacts to "Other" Programs
The courses which are moved by a semester include service courses from other programs and will impact enrollments in those courses; however, the impact will be minimal because M&ME is currently considered an excess-capacity program.

Impact on Library: No consultation is required since changes are only in the course number, course name, or course pre-requisites.

Date to take effect: 08/15/18

LEVEL of Request
Please indicate the type of request(s) by selecting *all that apply*:
Faculty Approvals (directly to CRC, then Faculty Senate):

☒ Amend an existing degree program. Making changes to programs such as adding a writing course to a major, changing the list of accepted electives or removing a requirement of a minor

APPROVALS
Department Head Approval _____ **Date** _____

Dean Approval _____ **Date** _____

VCAAR Approval (see above) _____ Date _____

Chancellor Approval (see above) _____ Date _____

Graduate Council Approval _____ Date _____

CRC Approval _____ Date _____

Faculty Senate Approval _____ Date _____

Remove this one course from the catalog (it is no longer offered):

EMET 562 Explosives Engineering 3 cr.

Proposed Catalog Changes:

ECNS 203 OR ECNS 201 or ECNS 202.

WRIT 121 **OR** W 101

PERMISSIBLE SCIENCE ELECTIVES include BIOB 160, BIOM 260, CSCI 117, CHMY 123, CHMY 210, CHMY 311/312, CHMY 321/322, CHMY 323/324, CHMY 371/372, CHMY 401 and PHSX 322 (only 3 science credit allowed)

PERMISSIBLE Professional ELECTIVES include any of the M&ME Track I and II courses as well as EGEN 102, EGEN 202, EELE 201/202, EENV 204, GEO 101, GEO 204, GEOP 101, GEOP 102~~, MIN 105~~, MIN 215, and any course numbered 300 or higher in CHMY, EELE~~,~~, EGEN, EMAT, EMET, EMEC, MIN, ENGR, ENVE, GEOE, GEOP, M or M.EC. EMET 494W (M&ME Seminar) may be taken up to two times for 1 credit each time.

A	Courses deleted from the M&ME general curriculum			
B	Courses new to the M&ME general curriculum and consequently removed from tracks			
C	Courses added to the tracks			
1	Social science elective moved from Sophomore Fall to Senior Fall			
2	Courses moved from Sophomore Spring to Freshman Spring (EMET 294 renumbered to EMET 194 as well)			
3	Courses moved from Junior Fall to Sophomore Fall			
4	Courses moved from Junior Fall to Sophomore Spring			
5	Courses moved from Junior Spring to Junior Fall			
6	Courses moved from Senior Fall to Junior Spring			
7	Technical elective changed from 3 credit to 2 credit			
8	Courses moved from Senior Spring to Senior Fall			
	The tracks have already been approved and await conformation from BofR			
	TRACK I - Mineral Processing & Extractive Metallurgy			
	GEO 204	Intro to Mineralogy-Petrology	3	
B	**EMET 425**	**M&ME Computer Applications**	**3**	
	EMET 434/534	Flotation	3	
	EMET 441/541	Flowsheet Development & Design	3	
B	**EMET 451**	**Process Instrumentation & Control**	**3**	
	EMET 501	Adv. Extractive Metallurgy I	3	
	EMET 502	Adv. Extractive Metallurgy II	3	
	EMET 511	Materials Handling Design	3	
C	**EMET 582**	**Processing of Energy Resources**	**3**	
	EMET 583	Processing of Precious Metals	3	
C	**EMET 555**	**Advanced Flotation**	**3**	
	TRACK II - Materials Processing & Physical Metallurgy			
	EWLD 488	Metallurgy of Welds	3	
	EMET 444/544	Casting & Solidification	3	
B	**EMET 451**	**Process Instrumentation & Control**	**3**	
	EMAT 460/560	Polymeric Materials	3	
	EMAT 463/563	Composite Materials	3	
	EMET 523	Advanced Thermodynamics	3	
	EMET 569	Failure Analysis & Design Life	3	
	EMET 570	Mechanical Behavior	3	
	EMAT 575	Biomaterials	3	
	EMAT 584	EOM Properties of Materials	3	
	BOTH TRACKS			
	EMET 420/520	P-Chem of Iron & Steelmaking	3	
	EMET 571	SEM/EDX	3	

	M&ME Program (Current)					M&ME Program (Proposed)		
	Freshman Fall Semester					**Freshman Fall Semester**		
	CHMY 141	College Chemistry I	3			CHMY 141	College Chemistry I	3
	CHMY 142	College Chemistry Lab I	1			CHMY 142	College Chemistry Lab I	1
	EGEN 101	Intro to Engr I	3			EGEN 101	Intro to Engr I	3
	EGEN 194	Freshmen Engineering Seminar	1			EGEN 194	Freshmen Engineering Seminar	1
	M 171	Calculus I	3			M 171	Calculus I	3
	WRIT 121****	College Writing I	3			WRIT 121****	College Writing I	3
	Humanities/Fine Arts*	Elective	3			Humanities/Fine Arts*	Elective	3
		Total	**17**				**Total**	**17**
	Freshman Spring Semester					**Freshman Spring Semester**		
	CHMY 143	College Chemistry II	3			CHMY 143	College Chemistry II	3
	CHMY 144	College Chemistry Lab II	1			CHMY 144	College Chemistry Lab II	1
A	**EGEN 102**	**Intro to Engr II**	**2**		2			
					2			
_					2			
	M 172	Calculus II	3			M 172	Calculus II	3
	PHSX 234	General Physics – Mechanics	3			PHSX 234	General Physics – Mechanics	3
	Humanities/Fine Arts*	Elective	3			Humanities/Fine Arts*	Elective	3
			18				**Total**	**17**
	Sophomore Fall Semester					**Sophomore Fall Semester**		
	EGNS 203**	Principles of Economics	3			EGNS 203**	Principles of Economics	3
	EGEN 201	Engineering Mechanics-Statics	3			EGEN 201	Engineering Mechanics-Statics	3
	M 273	Multivariable Calculus	4			M 273	Multivariable Calculus	4
	PHSX 235	General Phys-Heat, Sound, & Op	3			PHSX 235	General Phys-Heat, Sound, & Op	3
	PHSX 236	Phys Lab - Heat, Sound & Optics	1			PHSX 236	Phys Lab - Heat, Sound & Optics	1
1					_		**Mineral Processing and Design**	**2**
					3			
		Total	**17**				**Total**	**17**
	Sophomore Spring Semester					**Sophomore Spring Semester**		
	EMAT 251	Materials Structures & Properties	3			EMAT 251	Materials Structures & Properties	3
	EMET 307	M&ME Thermodynamics	3			EMET 307	M&ME Thermodynamics	3
	M 274	Intro to Differential Equations	3			M 274	Intro to Differential Equations	3
	PHSX 237	Gen. Phys.-Ele, Magn, & Motion	3			PHSX 237	Gen. Phys.-Ele, Magn, & Motion	3
	PHSX 238	Gen. Phys - Ele, Magn & Motion Lab	1			PHSX 238	Gen. Phys - Ele, Magn & Motion Lab	1
2					_		**Mechanics of Materials/Lab OR**	**4**
2					_		**Fluid Mechanics/Lab**	
2								
		Total	**17**				**Total**	**17**

	Junior Fall Semester					Junior Fall Semester		
3	EMET 233	Mineral Processing and Design	2					
3			1		5	EMET 401	Hydrometallurgy & Aqueous Processir	3
4			4		_		Pyrometallurgy and Thermal Processir	3
4					_		Extractive Metallurgy Lab	1
	EMAT 351	Fundamentals of Materials	3			EMAT 351	Fundamentals of Materials	3
	EMAT 353	Microstructural Interpretation	1			EMAT 353	Microstructural Interpretation	1
	STAT 332	Statistics for Scientists & Engineers	3			STAT 332	Statistics for Scientists & Engineers	3
	Elective***	Science or Technical	3			Elective***	Science or Technical	3
		Total	17				Total	17
	Junior Spring Semester					Junior Spring Semester		
	WRIT 321	Advanced Technical Writing	3			WRIT 321	Advanced Technical Writing	3
	EGEN 325	Engineering Economics and Analysis	3			EGEN 325	Engineering Economics and Analysis	3
	EMAT 354	Mat. & Phys. Metallurgy Lab	1			EMAT 354	Mat. & Phys. Metallurgy Lab	1
5		Hydrometallurgy & Aqueous Processir	3		6			
_		Pyrometallurgy and Thermal Processir	3		6			
_		Extractive Metallurgy Lab	1		B		M&ME Computer Applications	3
	Elective***	Science or Technical	3			Elective***		3
		Total	17				Total	17
	Senior Fall Semester					Senior Fall Semester		
	EMET 340	Mass Transfer & Chemical Kinetics	3			EMET 340	Mass Transfer & Chemical Kinetics	3
	EMAT 362	Ceramic Materials	3			EMAT 362	Ceramic Materials	3
6					1			
_		Materials Characterization & Analysis	3		8			
	EMET 489W	M&ME Design I	1			EMET 489W	M&ME Design I	1
7					_			
	Elective***	Technical	3			Elective***	Technical	3
		Total	17				Total	18
	Senior Spring Semester					Senior Spring Semester		
	EMET 350	Transport Phenomena	3			EMET 350	Transport Phenomena	3
	EMAT 472	Materials Engineering & Design	2			EMAT 472	Materials Engineering & Design	2
8					_			3
	EMET 499W	Capstone: M&ME Design II	2			EMET 499W	Capstone: M&ME Design II	2
	Elective***	Technical	3			Elective***	Technical	3
	Elective***	Technical	3			Elective***	Technical	3
		Total	16				Total	16
		GRAND	136				GRAND	136

Montana Tech

Curriculum Change Request Form Dated 2 Feb 2017

M&ME Program (Current)				M&ME Program (Proposed)				
Freshman Fall Semester				**Freshman Fall Semester**				
CHMY 141	College Chemistry I	3		CHMY 141	College Chemistry I	3		
CHMY 142	College Chemistry Lab I	1		CHMY 142	College Chemistry Lab I	1		
EGEN 101	Intro to Engr I	3		EGEN 101	Intro to Engr I	3		
EGEN 194	Freshmen Engineering Seminar	1		EGEN 194	Freshmen Engineering Seminar	1		
M 171	Calculus I	3		M 171	Calculus I	3		
WRIT 121 or W 101	College Writing I	3		WRIT 121 or W 101	College Writing I	3	B	Add W 101
Humanities/Fine Arts*	Elective	3		Humanities/Fine Arts*	Elective	3		
	Total	17			Total	17		
Freshman Spring Semester				**Freshman Spring Semester**				
CHMY 143	College Chemistry II	3		CHMY 143	College Chemistry II	3		
CHMY 144	College Chemistry Lab II	1		CHMY 144	College Chemistry Lab II	1		
EGEN 102	Intro to Engr II	2	DELETED	EMET 232	Introduction to Mineral Processing	2		
				EMET 234	Mineral Processing Lab	1		
Geo 101	Physical Geology	3	Deleted	EMET 194	M&ME Workshop	1		
M 172	Calculus II	3		M 172	Calculus II	3		
PHSX 234	General Physics – Mechanics	3		PHSX 234	General Physics – Mechanics	3		
Humanities/Fine Arts*	Elective	3		Humanities/Fine Arts*	Elective	3		
		18			Total	17		
Sophomore Fall Semester				**Sophomore Fall Semester**				
EGNS 203*	Principles of Economics	3		EGNS 203 or 202 or 201	Principles of Economics	3	B	Add 202 or 201
EGEN 201	Engineering Mechanics-Statics	3		EGEN 201	Engineering Mechanics-Statics	3		
M 273	Multivariable Calculus	4		M 273	Multivariable Calculus	4		
PHSX 235	General Phys-Heat, Sound, & Op	3		PHSX 235	General Phys-Heat, Sound, & Op	3		
PHSX 236	Phys Lab - Heat, Sound & Optics	1		PHSX 236	Phys Lab - Heat, Sound & Optics	1		
Social Science*	Elective	3		EMET 233	Mineral Processing and Design	2		
				EMET 235	Mineral Proc & Extractive Met Lab	1		
	Total	17			Total	17		
Sophomore Spring Semester				**Sophomore Spring Semester**				
EMAT 251	Materials Structures & Properties	3		EMAT 251	Materials Structures & Properties	3		
EMET 307	M&ME Thermodynamics	3		EMET 307	M&ME Thermodynamics	3		
M 274	Intro to Differential Equations	3		M 274	Intro to Differential Equations	3		
PHSX 237	Gen. Phys.-Ele, Magn, & Motion	3		PHSX 237	Gen. Phys.-Ele, Magn, & Motion	3		
PHSX 238	Gen. Phys - Ele, Magn & Motion Lab	1		PHSX 238	Gen. Phys - Ele, Magn & Motion Lab	1		
EMET 232	Introduction to Mineral Processing	2		EGEN 305/306	Mechanics of Materials/Lab OR	4		
EMET 234	Mineral Processing Lab	1		EGEN 325/326	Fluid Mechanics/Lab			
EMET 294	M&ME Workshop	1						
	Total	17			Total	17		
Junior Fall Semester				**Junior Fall Semester**				
EMET 233	Mineral Processing and Design	2						
EMET 235	Mineral Proc & Extractive Met Lab	1		5 EMET 401	Hydrometallurgy & Aqueous Processing	3		
EGEN 305/306	Mechanics of Materials/Lab OR	4		5 EMET 402	Pyrometallurgy and Thermal Processing	3		
EGEN 325/326	Fluid Mechanics/Lab			5 EMET 405	Extractive Metallurgy Lab	1		
EMAT 351	Fundamentals of Materials	3		EMAT 351	Fundamentals of Materials	3		
EMAT 353	Microstructural Interpretation	1		EMAT 353	Microstructural Interpretation	1		
STAT 332	Statistics for Scientists & Engineers	3		STAT 332	Statistics for Scientists & Engineers	3		
Elective***	Science or Technical	3		Elective***	Professional	3		
	Total	17			Total	17		
Junior Spring Semester				**Junior Spring Semester**				
WRIT 321	Advanced Technical Writing	3		WRIT 321	Advanced Technical Writing	3		
EGEN 325	Engineering Economics and Analysis	3		EGEN 325	Engineering Economics and Analysis	3		
EMAT 354	Mat. & Phys. Metallurgy Lab	1		EMAT 354	Mat. & Phys. Metallurgy Lab	1		
EMET 401	Hydrometallurgy & Aqueous Processing	3		EMET 380	M&ME Safety & Health	1		
EMET 402	Pyrometallurgy and Thermal Processing	3		EMAT 471	Materials Characterization & Analysis	3		
EMET 405	Extractive Metallurgy Lab	1		EMET 425	M&ME Computer Applications	3		
Elective***	Science or Technical	3		Elective***	Free	3		Added 3 credits free electives
	Total	17			Total	17		
Senior Fall Semester				**Senior Fall Semester**				
EMET 340	Mass Transfer & Chemical Kinetics	3		EMET 340	Mass Transfer & Chemical Kinetics	3		
EMAT 362	Ceramic Materials	3		EMAT 362	Ceramic Materials	3		
EMET 380	M&ME Safety & Health	1		Social Science*	Elective	3		
EMAT 471	Materials Characterization & Analysis	3		EMAT 475	Corrosion	3		New class
EMET 489W	M&ME Design I	1		EMET 489W	M&ME Design I	1		
Elective***	Technical	3		Elective***	Technical	2		Changed from 3 to 2
Elective***	Technical	3		Elective***	Technical	3		Technical elective list is from Tracks
	Total	17			Total	18		
Senior Spring Semester				**Senior Spring Semester**				
EMET 350	Transport Phenomena	3		EMET 350	Transport Phenomena	3		
EMAT 472	Materials Engineering & Design	2		EMAT 472	Materials Engineering & Design	2		
EMAT 475	Corrosion	3		EMET 451	Process Instrumentation & Control	3		NEW CLASS
EMET 499W	Capstone: M&ME Design II	2		EMET 499W	Capstone: M&ME Design II	2		
Elective***	Technical	3		Elective***	Technical	3		
Elective***	Technical	3		Elective***	Technical	3		
	Total	16			Total	16		
	GRAND	136			GRAND	136		

A Courses deleted from the M&ME general curriculum
B Courses new to the M&ME general curriculum and removed from tracks
C Courses added to the tracks
1 Social science elective moved from Sophomore Fall to Senior Fall
2 Courses moved from Sophomore Spring to Freshman Spring (EMET 294 renumbered to EMET 194 as well)
3 Courses moved from Junior Fall to Sophomore Fall
4 Courses moved from Junior Fall to Sophomore Spring
5 Courses moved from Junior Spring to Junior Fall
6 Courses moved from Senior Fall to Junior Spring
7 Technical elective changed from 3 credit to 2 credit
8 Courses moved from Senior Spring to Senior Fall

The tracks have already been approved and await conformation from BofR

THESE ARE ADVISING TRACKS

	PROFESSIONAL ELECTIVE CHOICE		
	TRACK I - Mineral Processing & Extractive Metallurgy		
	GEO 204 -	Intro to Mineralogy-Petrology	3
B	EMET 425	M&ME Computer Applications	3
	EMET 434/534	Flotation	3
	EMET 441/541	Flowsheet Development & Design	3
B	EMET 451	Process Instrumentation & Control	3
	EMET 501	Adv. Extractive Metallurgy I	3
	EMET 502	Adv. Extractive Metallurgy II	3
	EMET 511	Materials Handling Design	3
C	EMET 582	Processing of Energy Resources	3
	EMET 583	Processing of Precious Metals	3
C	EMET 555	Advanced Flotation	3
	TRACK II - Materials Processing & Physical Metallurgy		
	EWLD 488	Metallurgy of Welds	3
	EMET 444/544	Casting & Solidification	3
B	EMET 451	Process Instrumentation & Control	3
	EMAT 460/560	Polymeric Materials	3
	EMAT 463/563	Composite Materials	3
	EMET 523	Advanced Thermodynamics	3
	EMET 569	Failure Analysis & Design Life	3
	EMET 570	Mechanical Behavior	3
	EMAT 575	Biomaterials	3
	EMAT 584	EOM Properties of Materials	3
	BOTH TRACKS		
	EMET 420/520	P-Chem of Iron & Steelmaking	3
	EMET 571	SEM/EDX	3