Faculty Senate Minutes

4/12/2019

10-11 a.m.

SUB 113AB

Attendees: Charie Faught, Phil Curtiss, Janet Cornish (guest), Dawn Atkinson (guest), Chad Okrusch, Miriam Young, Jackie Timmer, Vickie Petritz, Laura Young, Ron White, Matt Donnelly, Chris Gammons, Peter Lucon, Jeanne Larson (for Katherine Zodrow), Scott Risser (for John Ray), Doug Abbott, Atish Mitra

I. Welcome and Minutes (https://www.mtech.edu/facultystaff/facultysenate/minutes/index.html)

Meeting called to order and quorum established. Senate members were introduced. Provost had comments on minutes from last meeting: a Montana Standard reporter called Provost about a 1.2-2mn USD budget shortfall (which was discussed in last meeting), with possible increasing fees. Senator: nobody knows at this moment what the situation is (exact figure of budget) which is disturbing. Provost: Budget committee is still deliberating on these matters, so it is not clear where did the "1.2-2 mn dollar shortfall figure" come from. Chair mentioned that senate will have discussion on this topic again (when clearer budget information is available) so that matters are clarified. Motion to approve minutes and seconded. **Motion Passed.**

Action Items

II. CRC Recommendations (see attached)
Motion to approve and seconded. **Motion Passed.**

III. General Education Recommendations (see attached)
Discussion about M 140. As it is an existing course, no need to go thru CRC. Can be used in Nursing instead of college algebra, and in some other departments too. Motion to approve and seconded. **Motion Passed.**

IV. Faculty Senate Elections (bylaw changes- see attached)
Chair: We have a Full Faculty meeting next week, so we are discussing the senate by-laws issue before we take to the full faculty meeting. Changes to by-laws verbiage were suggested. Multiple Senators suggested that the proposed change should be clearer: possibly show existing entry side by side with suggested replacement. It was suggested that these proposed changes can be brought back to the table as specific suggested changes (existing vs new) following procedure in Article VIII: amendments. Motion to do this by the next CRC meeting and seconded. **Motion passed.** A Senator argued against electronic election of officers. Chair: Discussion of Faculty Satisfaction Survey has been already added to the agenda of full faculty meeting.

Resolution to amend the Faculty Senate Bylaws to include: "The rules contained in the current edition of ***Robert's Rules of Order Newly Revised*** shall govern the Faculty Senate of Montana Technological University in all cases to which they are applicable and in which they are not inconsistent with these bylaws and any special rules of order the Faculty Senate of Montana Technological University may adopt." Senator: This adds protection and fairness if due process is followed. Parliamentary procedure ensures that the will of the majority holds, while preserving the rights of the minority: Robert's Rule helps in ensuring this. Motion to add this to bylaws and seconded. **Motion Passed.**

V. Request to form EAL Support Committee (see attached)

Janet Cornish presented: This proposal addresses needs of international student's. Goals: (1) How to help students for whom English is additional language? (2) Academic Honesty training (3) How to help students engage on campus (for example in team projects)? Suggested size of committee is about 7 members. Senate approval is requested. Senator: How to access the outcome (whether the program is successful)? Reply: Thru student success (maybe as measured by grades). Senator: does the committee advise the writing program or advise the admin? Why is this being proposed by the writing program? Senator: Is discussion about academic honesty discussion not already a part of the academic orientation program? Senator: Just adding another committee does not help, unless there is clear mandate of the committee. Also, it should be clear who the committee reports to. Senator: Why does it need endorsement of faculty senate? Reply: senate's blessings help give committees a legitimacy. Motion to get Senate approval and second. **Motion Passed.**

VI. Northwest Commission on Colleges and Universities Revisions to Accreditation Standards Comments (see attached e-mail language below)

Chair: NWCCU standards revising their standards, and "academic freedom" issues are not specifically included in the language. Chair: first draft is available at link on email. Senator: Suggest that we request Prof. John Ray to draft a statement for academic standards. **Chair confirmed to do that.**

Informational Items

VII. Committee updates:

a. Teaching Community – No Discussion
b. Research Mentors – No Discussion
c. Budget – see below
d. Campus Committee Assessment – No Discussion
e. Chancellor Search Advisory Committee – No Discussion
f. Faculty Satisfaction Survey – On agenda of Full Faculty Meeting

Discussion Items

VIII. Full Faculty Meeting Agenda Items

Senator: There are questions across campus about how things will go on budget (CFO and many other issues). Motion to put the following on agenda of full faculty meeting "Convene an executive session of the academic policy board (all full time faculty – research and teaching) to discuss personnel matters". (Explanation: Executive session means minutes not published or disclosed). Way to have faculty openly discuss things without fear of retribution. Motion seconded. **Motion Passed.**

Chair: also will talk about faculty satisfaction survey in full faculty meeting.

IX. Budget representation and budgeting process communication and reporting moving forward

Senator: When do we get a budget report? At this moment all we have is hearsay. Provost: The previous VC finance had open meetings for getting suggestions – didn't work. The senate budget representative has provided information about budget discussions to this body. Budget committee meets regularly. For the past meeting, academic subcommittee met, committee as a whole meets next week. It is unfortunate that a "2mn USD shortfall" was mentioned to Chancellor candidates, when we don't know actual shortfall amount. Senator: The private sector has budget information month to month. Why don't we? Provost: we know the state part of budget, but the tuition part is largely unknown. So we use a projection.

Chair: would the provost like to address the full faculty meeting about budgets etc.? Provost: yes, needs 10 minutes.

X. CFO search process – No Discussion

XI. Other Items

Motion to Adjourn. Adjourns @ 11:08am.

III. Northwest Commission on Colleges and Universities Revisions to Accreditation Standards Comments

http://www.nwccu.org/accreditation/standards-review/

From an e-mail received on April 1, 2019:

Over the last couple of weeks we have received emails regarding NWCCU's draft, revised Standards from AAUP affiliates and faculty senate chairs, and provosts of a few institutions. (Those individuals are copied on this email.)

Additionally, we have received input during conversations with some individuals.

Based on the recent input received, we've made a decision to incorporate appropriate language in our draft Standards for Academic Freedom and Governance, along with revisions on other matters suggested by others.

We've extended the deadline for submission of additional comments for revisions through April 15, 2019.

The draft will be revised and sent out for further comments in May. The draft will be revised based on this round of comments.

After the Commission has provided additional comments on the near final draft, it'll be revised as needed. Then it'll be sent out for a vote by NWCCU's family of institutions to approve the proposed Standards in late Summer 2019.

As I have noted previously, this is an iterative process and we appreciate the input, which continues strengthen the Standards.

Our hope is that, once approved, the new Standards will be deployed starting in January 2020.

If not already done, please connect with your relevant faculty organizations on your campuses, such as faculty senate chairs, and exhort them and other faculty to provide input regarding the draft Standards.

They may submit their comments on the current version of revised Standards available at (http://www.nwccu.org/accreditation/standards-review/) either via this link (https://www.tfaforms.com/4719938) or via email (standards@nwccu.org).

Thanks for your help.

Sonny Ramaswamy, President

Northwest Commission on Colleges and Universities

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Twitter: @NWCCUSonny

IV. Faculty Senate Elections (bylaw changes- see attached)

Verbiage to the change in bylaws:

1) For department term turn overs: Individual departments will vote in new members no later than the 2nd to last meeting of the spring semester. New faculty senators should plan to attend the last two meetings of the year and participate in electing new officers.
2) Officer elections must take place with the faculty senators who represent the up-coming academic year and must take place no later than the last meeting of the spring semester
3) Elections of officers can take place electronically.
4) A Faculty Satisfaction Survey is part of the duties of the Faculty Senate and should be disseminated at least once per year. This survey must be anonymous and must be managed by at least one officer

Resolution to amend the Faculty Senate Bylaws to include:

"The rules contained in the current edition of ***Robert's Rules of Order Newly Revised*** shall govern the Faculty Senate of Montana Technological University in all cases to which they are applicable and in which they are not inconsistent with these bylaws and any special rules of order the Faculty Senate of Montana Technological University may adopt."

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/26/2019
Dept. Several in CLSPS and SME
Program Earth Science and Engineering PhD

College Graduate School
CRC Representative Alysia Cox

Description of Request:
Offer a Ph.D. program in Earth Science and Engineering

Proposed Changes in Yellow

The Graduate School at Montana Tech seeks authorization to offer a Doctor of Philosophy (Ph.D.) in Earth Science and Engineering (ESE), building on existing engineering and science BS and MS programs and the Montana Bureau of Mines and Geology (MBMG). Graduates will be positioned for numerous careers important to Montana, including energy/mineral development, geological/geophysical exploration, environmental consulting/protection, land/resource management, state and federal government, academia, and non-profits. Specialties take advantage of Montana Tech's and MBMG's distinctive strengths in Geological, Environmental, Petroleum, Mining, Mineral and Metallurgical Processing, and Hydrogeological Engineering, along with Geochemistry, Geophysics, Hydrogeology, and Economic Geology.

List of supporting documentation attached:

1. Summary document of academic aspects of the Level II proposal to establish the ESE PhD program
2. Full level II Curriculum proposal to the BoR

Assessment Leading to Request
See level II proposal.

Anticipated Impacts to "Other" Programs
Low enrollment graduate courses in the participating departments will gain in enrollment. No changes are needed in curricula for other programs. Some M.S. students in other programs may elect to continue into Ph.D. study. Also see attached Level II proposal.

Impact on Library:
Library holdings are adequate, due to the program's relationship with existing B.S. and M.S. programs and MBMG.

Date to take effect: 2020 catalogue

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval Many Departments. Both deans coordinated Date _____

Dean Approval _____ Date 3/25/19

Graduate Council Approval _____ Date 3/26/19

CRC Approval _____ Date 3/28/19

Faculty Senate Approval _____ Date _____

VCAA Approval (see below) _____ Date _____

Chancellor Approval (see below) _____ Date _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
  Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing.
- ☐ 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
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☐ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- X Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit

SUMMARY OF MONTANA TECH'S
EARTH SCIENCE & ENGINEERING PH.D. PROGRAM PROPOSAL
Draft: March 2019

Introduction. Montana Tech proposes to offer a Doctor of Philosophy (Ph.D.) in Earth Science and Engineering (ESE), building on existing engineering and science BS and MS programs and the Montana Bureau of Mines and Geology (MBMG). Graduates will be positioned for numerous careers important to Montana, including energy/mineral development, geological/geophysical exploration, environmental consulting/protection, land/resource management, state and federal government, academia, and non-profits. Specialties take advantage of Montana Tech's and MBMG's distinctive strengths in Geological, Environmental, Petroleum, Mining, Mineral and Metallurgical Processing, and Hydrogeological Engineering, along with Geochemistry, Geophysics, Hydrogeology, and Economic Geology. This Ph.D. proposal and focus area builds naturally on Montana Tech's historic status as Montana's School of Mines; its current designation by the Board of Regents as a special focus institution, focused on science, engineering, technology, and health; its long-standing constituency of extractive and natural-resource-focused stakeholders; and the continuing economic importance of such industries to Montana. The program is planned to grow to a steady state enrollment in the range of 15 to 20 students. About three students per year would be admitted initially.

Justification. Earth science and engineering support Montana economic development and vital sectors of Montana's economy: agriculture, mining, transportation, manufacturing, energy, tourism and recreation. Earth scientists and engineers with doctoral degrees provide leadership in the quest to protect communities from natural hazards and to locate, develop, and manage water, energy, and mineral resources safely, sustainably, and in a manner that protects the environment. Geoscientists and engineers are in demand in industry, government agencies (e.g. BLM, EPA, USFS, Montana DEQ, Montana DNRC, and MBMG), and as consultants, professors, and teachers. Montana Tech's ESE PhD program will complement and collaborate with related doctoral programs at UM and MSU to provide Montana, the US, and the world with knowledgeable earth scientists and engineers prepared to handle environmental, energy, land, water, mineral, and natural-hazard challenges facing local communities, the state, nation, and world. The Ph.D. students will tackle significant earth science and engineering problems requiring concentrated effort and the specialized expertise of their Montana Tech faculty mentors. Such problems are out of reach for master's or bachelor's students, who lack the skills, knowledge, and most critically, the time needed for such projects.

By integrating earth science and engineering, the proposed ESE Ph.D. complements rather than duplicates the existing geoscience and environmental Ph.D. programs at Montana State University and the University of Montana. The ESE PhD program complements the existing programs by integrating modeling, design, and engineering with science, taking advantage of proximity to the Montana Bureau of Mines and Geology (MBMG) and campus strengths in engineering (Environmental, Mining, Petroleum, Metallurgical and Mineral Processing, Geotechnical, and Hydrogeological) and earth science (Hydrogeology, Hydrology, Geophysics, and Geochemistry). Immersion in both science and engineering and intrinsic

multidisciplinarity distinguish it from the other programs, thereby expanding the Montana University System's doctoral offerings in this broad economically important field. Distinctive strengths include application to extractive industries and natural hazard reduction. Montana Tech faculty developing this program are enthusiastic about pursuing research collaboration with the other geo-focused PhD program faculty and to boost Montana's competitiveness for federal research funding in these fields. Instructional collaboration could reduce costs by enabling higher enrollment in advanced courses shared among the three campuses.

Learning Outcome Goals. The proposed ESE-PhD program has five objectives that reflect the learning outcomes established by the Graduate School. The Assessment section below summarizes how these outcomes will be assessed. Students will

- Acquire up-to-date, advanced knowledge, skills, and understanding in and integrating earth science and engineering, as needed to meet the changing needs of society;
- Blend theory with practice and science with engineering to integrate, design, model, problem solve, and apply advanced knowledge, skills and understanding in earth science and engineering;
- Develop skills in communicating technical and complex material orally, in writing, and using various media for a broad range of audiences;
- Demonstrate leadership skills and ethical principles applicable to earth science and engineering as a discipline and profession, including the ability to enable the responsible and sustainable development and use of natural resources, and to address issues related to natural resources and to protecting and restoring the environment facing humanity today and in the future; and
- Make a significant and original contribution to advance knowledge in earth science and engineering.

Curriculum. The proposed ESE-Ph.D. is a research degree. Students would be required to earn at least 60 credits (beyond the bachelor's degree). The curriculum requires a minimum of 26 credits of course work (2 credits of Earth Science and Engineering seminar + eight 3-credit courses). At least five of the courses (15 credits) must be at the 500 level, and no credits can be accepted below the 400 level. Students entering with a master's degree would be allowed to petition to transfer up to 24 course credits (no research credits and no seminar credits) toward the Ph.D., subject to approval by the faculty, if they are applicable to the degree. Within the curriculum at least three courses (9 credits) must feature engineering content and skills and at least three courses (9 credits) must feature science content and skills. All PhD students must take a 1-credit Earth Science and Engineering seminar during their first semester, at which participating faculty introduce and present their research. ESE-PhD students will also take Montana Tech's graduate writing seminar. Each student could specialize and earn a degree concentration or option, such as geochemistry, geological engineering, hydrogeology, mining engineering, or any other earth science and engineering subdiscipline where Montana Tech offers a M.S. or Geoscience M.S. option. For the option, each department will have a specified set of at least four courses or a menu from which students seeking that option would select at least four courses. Montana Tech currently offers more than 70 different 400- and 500-level courses applicable to the

ESE-Ph.D at least every other year. Students would not be limited to these courses, but would be encouraged to seek out and enroll in specialized advanced graduate-level courses at UM, MSU, and other highly regarded institutions, where they can learn from leaders in the field about topics important to their specialties.

Students must pass three examinations to demonstrate their ability to be independent thinkers and scholars, along with a comprehensive foundation of earth science and engineering knowledge and understanding: the Qualifying Exam, the Candidacy Exam and the final Dissertation Defense. The Qualifying Exam tests the student's ability to be an independent thinker and scholar, as well as demonstrate knowledge breadth and depth in earth science and engineering. The student will write an independent research proposal unrelated to their dissertation research topic and present and defend it to their dissertation committee. During the oral defense, the student will be questioned on their proposal as well as breadth of knowledge in earth science and engineering. The Candidacy Exam is a dissertation proposal defense by the qualified student to the dissertation committee. This oral defense is designed to help the student have a plan to execute successful and original research. Finally, students will complete and defend orally a dissertation presenting the results of significant and original research that advances knowledge in earth science and engineering. Students must enroll in a total of at least 18 dissertation credits to complete the degree. To reach the total of 60 credits, students may take additional courses or additional research credits beyond the minimum amount required.

Admissions Criteria comply with Montana Tech's graduate admissions criteria. Briefly, students must have an earned bachelor's degree from a regionally accredited institution of higher education (or a recognized international equivalent) with a cumulative undergraduate GPA of at least 3.0 on a 4.0 scale. They must take and submit scores for the GRE General Test, provide three letters of recommendation, transcripts from all universities attended, and a statement of purpose for pursuing the degree. GRE scores will be considered holistically in combination with the other materials. Students educated outside the United States must provide additional materials (such as officially evaluated transcripts and English Proficiency Scores from IELTS (score of at least 7.0) or TOEFL (score of at least 85). Students will be admitted to the program in Fall semester only (August).

Admitted students are assigned an initial advisor in the admissions offer. Not later than the third semester, they will form a graduate committee, with at least five members. The Graduate Committee collaborates with the student to design, manage, and oversee the student's curriculum and progression through the program. The committee chair would be the research advisor. Two other committee members will be Montana Tech faculty affiliated with the ESE-Ph.D. program. At least one of the three program faculty on the committee will be an engineer, and at least one member will be a scientist. The fourth member of the committee is the "Graduate School Representative," a faculty member NOT involved with the ESE-PhD. The fifth member is an expert in the area of the student's research, who is NOT a faculty member at Montana Tech. Each member of the Graduate Committee must have a Ph.D. and at least four members of the Committee, including the external member, must be on the student's dissertation committee.

Assessment. The table summarizes the learning outcomes and programmatic objectives and provides sample measures and metrics that will be collected and reviewed annually and summarized into a formal report for Montana Tech's Program Review Cycle every two years.

Learning Outcomes and Programmatic Objectives	Measures and metrics
Acquire up-to-date, advanced knowledge, skills, and understanding in and integrating earth science and engineering, as needed to meet the changing needs of society;	• Qualifiying exam • Candidacy exam • Dissertation and defense • Special training: software, etc.
Blend theory with practice and science with engineering to integrate, design, model, problem solve, and apply advanced knowledge, skills and understanding in earth science and engineering;	• Dissertation and defense • Publications • Conference presentations
Develop skills in communicating technical and complex material orally, in writing, and using various media for a broad range of audiences;	• Dissertation and defense • Publications and presentations • Qualifying exam • Candidacy exam • Outreach participation
Demonstrate leadership skills and ethical principles applicable to earth science and engineering as a discipline and profession, including the ability to enable the responsible and sustainable development and use of natural resources, and to address issues related to natural resources and to protecting and restoring the environment facing humanity today and in the future.	• Dissertation topic and candidacy exam • Professional society membership • Service • Internships • Mentoring undergraduates • Placement rate and position • Grants/scholarships received
Make a significant and original contribution to advance knowledge in earth science and engineering.	• Dissertation & judgment of committee • Peer-reviewed publications • Invited talks at conferences
Programmatic: Impact, Enrollment, retention, completions, faculty & department engagement	• Evaluation of External Adv. Board • Applications & quality of students • Enrollment & Degrees granted • Time to degree • Active faculty & departments • Applicant demand • Program reputation • Employment in Montana • Alumni & employer surveys

Collaboration Opportunities with Related Doctoral Programs at UM and MSU.
We seek input from colleagues at UM and MSU on how Montana and all three campuses, their students, and MBMG can benefit maximally from synergies and collaborations? Research collaborations? Courses? Instrumentation?

ESE-PhD Faculty Program Development Team at Montana Tech (Many Others Also Involved)
Alysia Cox, Geochemistry, Team Leader
Chris Gammons, Geochemistry
Marvin Speece, Geophysics
Xiaobing Zhou, Geophysics
Abhishek Choudhury, Mining Engineering
Avimanyu Das, Metallurgical Engineering
Raja Nagisetty, Environmental Engineering
Chris Roos, Mining Engineering
Glenn Shaw, Hydrogeological Engineering
John Metesh, Montana Bureau of Mines & Geology
Madeleine Gotkowitz, Montana Bureau of Mines & Geology
Sue Schrader, Petroleum Engineering

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date: 3/6/19
Dept: Liberal Studies **College:** CLSPS
Program Interdisciplinary Arts & Sciences major **CRC Representative:** Dr. Isabel Campos

Description of Request: Revise curriculum for IAS major removing Career Planning (2 credits) and Special Topics (1 credit) requirements.

Current Course or Program Information:

Career Planning
L.S. 1006 - Career/Life Planning 2 credits
Capstone
L.S. 4916 - Internship (at least 3 credits) OR L.S. 4986 - Undergraduate Research (at least 3 credits)
L.S. 4956 - Special Topics (1 ore more credits)

Proposed Change

Course # Name	Credits	Pre-req.
Remove L.S. 1006 and L.S. 4956 from required courses.		
New catalog language:		
"Capstone		
L.S. 4916 - Internship (at least 3 credits) OR L.S. 4986 - Undergraduate Research (at least 3 credits)"		

Assessment Leading to Request
For the last three years the department has not had the staffing to offer L.S. 1006 and students have been substituting MTech Success for this course.
Similarly, the majority of graduates over the last two years have been fulfilling the capstone requirement (research presentation, resume portfolio construction, etc.) within the 3 required credits of either the internship or undergraduate research capstone courses.

Anticipated Impacts to "Other" Programs
These courses are primarily for IAS majors.

Impact on Library: No consultation is required.

~~**Date to take effect:**~~ As in all CRC changes, this request should take effect in future MTech catalogs

APPROVALS

Department Head Approval **SD Risser** **Date 3/6/19**

Dean Approval _____ **Date** _____

CRC Approval _____ Date 3/28/19

Faculty Senate Approval _____ Date _____

LEVEL of Request - *Faculty Approvals*

✓ 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

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/20/2019
Dept. Safety, Health and Industrial Hygiene
Program B.S. OSH
College School of Mines and Engineering
CRC Representative Theresa Stack

Description of Request:
The OSH 495 Practicum is offered as an alternative to an internship. Students spend a week in the field visiting various industrial sites the week before classes being (35hours) and then 2 hours a week through the rest of the semester. Class size has ranged from 5-13. The instructor drives the students to various sites the week before formal classes begin. The request is to designate this as a laboratory class by changing the name and modifying the description.

Current Course or Program Information:
This course provides students with internship experience in occupational safety and health. Students will visit numerous working establishments to learn from the site OSH manager how they implement programs to comply with regulatory requirements, train personnel, and strengthen their safety culture. Students will anticipate, recognize, evaluate and write recommendations for risk mitigation. (2 credit hours).
Prerequisites:
SR. standing, and C- or above

- OSH 2246 OSH 2266
- OSH 3236 OSH 3546
- OSH 4216 IH I (co-requisite).

Students are added by approval of the instructor.

Proposed Change

Course # Name	**Credits**	**Pre-req.**
OSH 495 Practicum Laboratory	**2 credit hours laboratory**	

This course provides students with internship experience in occupational safety and health. Students will visit numerous working establishments to learn from the site OSH manager how they implement programs to comply with regulatory requirements, train personnel, and strengthen their safety culture. Students will anticipate, recognize, evaluate, and write recommendations for risk mitigation. This course requires fieldwork to include standing, walking, or sitting for four or more hours.

Prerequisites:
SR. standing, and C- or above

- OSH 2246, OSH 2266
- OSH 3236 OSH 3546
- OSH 4216 IH I (co-requisite).

Students are added by approval of the instructor.

List of supporting documentation attached:
1. none

Assessment Leading to Request
Class incurs a cost to the department and there is not a means to replace lost or broken PPE used by the students. Class requires significate preparation time in addition to the lecture material covered throughout the semester. This laboratory class provides students with first-hand experience with concepts and with the opportunity to explore methods used by practitioners in their discipline. Leading a laboratory session has particular challenges and opportunities that differ from those in a standard classroom environment.
Anticipated Impacts to "Other" Programs None
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: 2019 catalogue

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ **Date** 3/20/19

Dean Approval _____ **Date** 3-25-19

Graduate Council Approval N/A _____ Date _____

CRC Approval _____ Date 3/28/19

Faculty Senate Approval _____ Date _____

VCAA Approval (see below) _____ Date _____

Chancellor Approval (see below) _____ Date _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
- X Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing.
- ☐ 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
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☐ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit
- X Other: Adding a laboratory fee

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date March 26, 2019
Dept. Health Care Informatics **College** CLSPS
Program: Health Care Informatics **CRC Representative Kristi Bailey**

Description of Request: The request is due to the moratorium of the associates and bachelor's degree in Health Care Informatics and the transfer of some but not all of the courses to the new Business and Information Technology, Health Information Technology degree (BIT/HIT). With both the minor and the new

Current Course or Program Information: The minor is designed for students in another four year degree program at Tech. The HCI minor gives students additional skills and knowledge that they can apply to the health care industry (such as business students) or in the informatics field (such as nursing).

Proposed Change

Course # Name	Credits	Pre-req.
See attached worksheet. Courses to be removed are		
HIT 101 Introduction to Health Care Informatics- 3 Credits		
HCI 312 Health Care Delivery in the US II- 3 credits		
HCI 420 Public Health Informatics- 3 credits		
HCI 4946 Health Care Informatics Seminar- 2 credits		
Courses to be added are		
HIT 422 Health Care Finance and Revenue Cycle Management- 3 credits		
HCI 440 Data Integration and Exchange- 3 credits		

List of supporting documentation attached:

1. **Curriculum worksheet**

Assessment Leading to Request

As noted above, the moratorium of the HCI associate's and bachelor's degree led to a review of the HCI minor.

Anticipated Impacts to "Other" Programs

No impacts are anticipated- the courses listed will be part of the new BIT/HIT degree (no new courses expected).

Impact on Library: Charie Faught has consulted with Scott Juskiewicz (03/26/2019) at the Montana Tech library to ensure needed materials and media are available. (Or No consultation is required since changes are only in the course number, course name, or course pre-requisites.)

Date to take effect: Fall 2019

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ Date 3/26/2019

Dean Approval _____ Date 3/26/2019

Graduate Council Approval _____ Date _____

CRC Approval _____ Date 3/28/19

Faculty Senate Approval _____ Date _____

VCAA Approval (see below) _____ Date _____

Chancellor Approval (see below) _____ Date _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
- ☐ Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing.
- ☑ 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
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☐ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit
- ☐ Other:

Curriculum Worksheet

Curriculum Worksheet

Health Care Informatics Technology Certificate (HIT Certificate Program)

	Course #	Name	Credits		Semester Taken	Grade Received
	AHMS 144	Medical Terminology	3	Fall or Spring		
Track 1:	AHMS 252/BUS 0261	Computerized Medical Billing	3	Spring Semester		
for Information	~~HIT 101~~	~~Intro to Health Care Information~~	~~3~~	~~Fall or Spring~~		
Technology	~~HCI 215~~	~~Healthcare Facility Procedures~~	~~3~~	~~Fall Semester~~		
Professionals	HIT 265	EHR in Medical Practice	3	Fall or Spring		
		Total	15			
	~~HIT 101~~	~~Intro to Health Care Information~~	~~3~~	~~Fall or Spring~~		
Track 2:	HIT 260	Workflow Process and Redesign (formerly Data, Information, and Knowledge)	3	Spring Semester		
for Allied Health	HIT 230	Overview of HCI Systems	4	Fall Semester		
& Medical	HIT 265	EHR in Medical Practice	3	Fall or Spring		
Professionals	HCI 410	Project & System Management	4	Spring Semester (fall in 2015)		
		Total	17			

Curriculum Worksheet NEW!

Health Care Informatics Technology Certificate (HIT Certificate Program)

	Course #	Name	Credits		Semester Taken	Grade Received
	AHMS 144	Medical Terminology	3	Fall or Spring		
Track 1:	AHMS 252/BUS 0261	Computerized Medical Billing	3	Spring Semester		
for Information	HIT 230	Overview of HCI Systems	4	Fall Semester		
Technology	HIT 260	Workflow Process & Redesign	3	Spring Semester		
Professionals	HIT 265	EHR in Medical Practice	3	Fall or Spring		
		Total	16			
	HCI 310 or HCI 320	HC Delivery or Info Systems Sec	3	Fall		
Track 2:	HIT 260	Workflow Process and Redesign (formerly Data, Information, and Knowledge)	3	Spring Semester		
for Allied Health	HIT 230	Overview of HCI Systems	4	Fall Semester		
& Medical	HIT 265	EHR in Medical Practice	3	Fall or Spring		
Professionals	HCI 410	Project MGT & Systems Analysis	4	Spring Semester (fall in 2015)		
		Total	17			

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/15/2019
Dept. **Business and Information Technology** **College** CLSPS
Program Bachelor of Science **CRC Representative David Hood**

Description of Request: The Department of Business and Information Technology respectively requests the name of the BMIS 320 course be changed from *Business Modeling I to Business Modeling.*

Current Course or Program Information: The BMIS 320 Business Modeling I course has historically been the first course of a two course sequence in business modeling. BMIS 320 Business Modeling I was a prerequisite for our BMIS 375 Business Modeling II course. This spring the CRC approved the proposal to change of name of the BMIS 375 course from *Business Modeling II* to BMIS 375 *Data Analytics.*

Proposed Change

Course # Name	Credits	Pre-req.
BMIS 320 Business Modeling	3	

The proposal is to rename the course *Business Modeling*. Since the BMIS 375 Data Analytics course is no longer titled Business Modeling II, it appears appropriate to rename the BMIS 320 course from Business Modeling I to Business Modeling.

The content, and intended student learning outcomes, of the BMIS 320 course will remain intact.

List of supporting documentation attached:
No supporting documentation is provided.

Assessment Leading to Request
The assessment for this request was a part of the assessment for the previous BMIS 375 Data Analytics request.

Anticipated Impacts to "Other" Programs
None

Impact on Library:. It is believed there will be no incremental impact on library resources. Scott Juskiewicz was briefed on this proposal.

Date to take effect: **The change will be incorporated in the 2019-20 Catalog.**

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ **Date** 3/20/2019

Dean Approval Steven D. Gammon **Date** 03/25/2019

Graduate Council Approval _____ **Date** _____

CRC Approval _____ **Date** 3/28/19

Faculty Senate Approval _____ **Date** _____

VCAA Approval (see below) _____ **Date** _____

Chancellor Approval (see below) _____ **Date** _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
- ☒ Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing
  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
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☐ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission):*

- ☐ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission):*

- ☐ Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit
- ☐ Other:

Department of Business and Information Technology
Proposed Changes to the BAS Degree
March 2019

	Existing Requirements			Proposed Requirements		
Block Transfer (AAS degree):	54 credits			54 credits		
General Education:	30 credits			30 credits		
Communication:	WRIT 101 College Writing WRIT 222 Advanced Business Writing			WRIT 101 College Writing WRIT 222 Advanced Business Writing		
Humanities:	BGEN 363 Business Ethics Humanities Elective			BGEN 363 Business Ethics Humanities Elective		
Math (pick 2 of 3):	M 141 Math for Bus and SS I M 141 Math for Bus and SS II STAT 216 Introduction to Statistics			M 141 Math for Bus and SS I M 141 Math for Bus and SS II STAT 216 Introduction to Statistics		
Physical Science	Elective Elective with a lab			Elective Elective with a lab		
Social Sciences:	ECNS 203 Principles of Micro and Macro Elective			ECNS 203 Principles of Micro and Macro Elective		
Business Core:	24 credits			18 credits		
	ACTG 201 Principles of Financial Acct ACTG 202 Principles of Managerial Acct BGEN 235 Business Law I BMGT 335 Management and Organization BMKT 325 Marketing BFIN 322 Business Finance ACTG 321 AIS/BMIS 311 MIS BMGT 426 Strategic Management			ACTG 201 Principles of Financial Acct ACTG 202 Principles of Managerial Acct BGEN 235 Business Law I BFIN 322 Business Finance ACTG 321 AIS/BMIS 311 MIS BMGT 426 Strategic Management		
Track Requirements:	Accounting	Construction Management	Management	Accounting	Construction Management	Management
	12 Credits			18 Credits		
Required:	ACTG 301 ACTG 302 ACTG 410	BMGT 329	BMGT 329	ACTG 301 ACTG 302 ACTG 401 ACTG 410 ACTG 411	BMGT 329 or BMGT 362	BMGT 329 BMGT 335 BMKT 325
Electives	Pick 1	Pick 3	Pick 3	Pick 1	Pick 5	Pick 4
	ACTG 401 ACTG 402 ACTG 411 ACTG 412 ACTG 420 ACTG 436	ECIV 208 ECIV 304 EGEN 325 ECIV 307 ECIV 391	ACTG 410 ACTG 420 BGEN 236 BMGT 322 BMGT 353 BMGT 362 BFIN 455	ACTG 402 ACTG 412 ACTG 415 ACTG 436 ACTG 498	ECIV 208 ECIV 304 EGEN 325 ECIV 307 ECIV 391 ECIV 405 BMGT 322 HCI 410 BMGT 498	ACTG 410 BGEN 236 BGEN 360 BMGT 322 BMGT 353 BMGT 362 BMGT 448 BMKT 337 BMKT 342 HCI 410 BMIS 320 BMIS 415 BMGT 498

#3

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/15/2019
Dept. **Business and Information Technology** **College** CLSPS
Program **Bachelor of Science** **CRC Representative** **David Hood**

Description of Request: The Department of Business and Information Technology requests that the options in Marketing, Management, and Information Technology be dropped from the catalog and a new option titled Management of Information be created. The new option on Management of Information is designed to consolidate the current options in Information Technology and Management into a single option.

Current Course or Program Information: Business students studying under our bachelor of science program have historically been able to select a course of study in Marketing, Management or Information Technology as options of study. The marketing and management options have been relatively popular among our students whereas the Information Technology option has not. Additionally, the Program Prioritization Committee has recommended a reduction in the number of available options under our bachelor of science program.

Proposed Change

Course # Name	Credits	Pre-req.
The Department of Business and Information Technology requests that the Marketing, Management, and Information Technology Options under the Bachelor of Science program be removed from the University catalog starting with the 2019-20 academic year. It is also requested that a new option in Management of Information be introduced to University Catalog starting with the 2019 – 20 academic year.		

List of supporting documentation attached:
No supporting documentation is provided.

Assessment Leading to Request
The Department has engaged in internal discussions as well as informal discussions with its advisory board as to how it could best address the recommendations from the Program Prioritization Committee. These discussions led to this proposal related to the options under our bachelor of science program. It was decided to remove the marketing option from the catalog primarily because there is no real champion of the marketing program among the current Department faculty members. As for the current options in management and information technology, the Department has a vision to incorporate additional data analytics and analysis into the business program and it is believed that renaming the option *Management of Information* is a better description of the program of study than either *Management* or *Information Technology*. Additionally, this move works to incorporate the recommendation of the Program Prioritization Committee as it will remove two options from our bachelor of science program.

Anticipated Impacts to "Other" Programs
There are no anticipated impacts to other programs.

Impact on Library:. It is believed there will be no incremental impact on library resources. Scott Juskiewicz was briefed on this proposal.

Date to take effect: **The change will be incorporated in the 2019-20 Catalog.**

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ **Date** 3/20/2019

Dean Approval Steven D. Gammon **Date** 03/25/2019

Graduate Council Approval _____ **Date** _____

CRC Approval _____ **Date** 3/28/19

Faculty Senate Approval _____ **Date** _____

VCAA Approval (see below) _____ **Date** _____

Chancellor Approval (see below) _____ **Date** _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
  Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing
  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
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☒ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☒ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit
- ☐ Other:

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/20/2019
Dept. **Business and Information Technology** **College** CLSPS
Program Bachelor of Science **CRC Representative David Hood** #4

Description of Request: The Department of Business and Information Technology respectively requests two changes to the business core required under its bachelor of science program. This core is required and common for all options under the bachelor of science program.
The first requested change in this proposal would remove the requirement of BGEN 360 International Business and replace it with a free/general elective. The second requested change is designed to reduce the number of course substitutions being processed by our department. Students from other departments on campus transfer to our department after completing different math, statistics, or communication courses than those required for our students. These different courses have always been accepted by the department but nonetheless require formal course substitution forms. The department requests that we be allowed to incorporate these commonly substituted courses into our catalog in order to bypass the formal course substitution process.

Current Course or Program Information: The current requirements under the bachelor of science program include the following required courses:

- BGEN 360 International Business
- M 141 Math for Business and Social Science I
- M 142 Math for Business and Social Science I
- STAT 216 Introduction to Statistics
- COMX 111 Introduction to Public Speaking

Proposed Change

Course # Name	Credits	Pre-req.

- Remove the requirement of BGEN 360 International Business as a requirement and replace it with a free/general elective.
- Expand the other requirements listed above to include common course substitutions as follows:
  - M 141 Math for Bus and Social Science I to M 141 or M 151 Precalculus
  - M 142 Math for Bus and Social Science II to M 142 or M 171 Calculus I
  - STAT 216 Introduction to Statistics to STAT 216 or STAT 131 Introduction to Biostatistics or STAT 332 Statistics for Scientists and Engineers
  - COMX 111 Introduction to Public Speaking to COMX 111 or COMX 230 Presenting Technical Information

List of supporting documentation attached:
This request includes a proposed general business curriculum under the bachelor of science program. The proposed changes are highlighted in yellow.

Assessment Leading to Request
This proposal has been thoroughly discussed by the department faculty members and has been presented to our Industrial Advisory Board (IAB). All parties support the proposal for similar reasons. Currently, the business program at Montana Tech is the only business program in Montana that requires a stand-alone course in International Business. It is believed the other courses required in the department's curriculum contain ample international business related topics in order to meet our accreditation requirements. This proposal will allow students the ability to elect a course of interest or transfer an additional free/general elective into their individual course of study. The BGEN 360 International Business course will be allowed as an option concentration elective course under our options of study for those students interested in additional international business coursework.
The primary purpose of the expansion of accepted math, statistics, and communication courses will be to reduce the number of formal course substitutions required by students. The courses included in the expanded list have always been accepted as course substitutions in the past.

Anticipated Impacts to "Other" Programs
There are no anticipated impacts to other programs.

Impact on Library:. It is believed there will be no incremental impact on library resources. Scott Juskiewicz was briefed on this proposal.
Date to take effect: The change will be incorporated in the 2019-20 Catalog.

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ Date 3/20/2019

Dean Approval Steven D. Gammon Date 03/25/2019

Graduate Council Approval _____ Date _____

CRC Approval _____ Date 3/28/19

Faculty Senate Approval _____ Date _____

VCAA Approval (see below) _____ Date _____

Chancellor Approval (see below) _____ Date _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

Establish a new course for the catalog (please contact the Registrar of MUS CCN information)

Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing

- [x] 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
- [ ] New degree certification program of 29 credits or less
- [ ] Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

Placing a postsecondary educational program into moratorium

- [ ] Withdrawing a postsecondary educational program from moratorium
- [ ] Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- [ ] Establishing a B.A.S./A.A./A.S. area of study
- [ ] Offering an existing postsecondary educational program via distance or online delivery
- [ ] Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

Re-titling an existing postsecondary educational program

- [ ] Terminating an existing postsecondary educational program
- [ ] Consolidating existing postsecondary educational programs
- [ ] Establishing a new minor where there is a major or an option in a major
- [ ] Revising a postsecondary educational program
- [ ] Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- [ ] Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- [ ] Establishing a new postsecondary educational program
- [ ] Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- [ ] Forming, eliminating or consolidating an academic, administrative, or research unit
- [ ] Re-titling an academic, administrative, or research unit
- [ ] Other:

Department of BIT
Proposed Curriculum
Bachelor of Science - Common Core to all Options
March 2019

Freshmen

BGEN 105	Introduction to Business	3	COMX 111	Intro to Public Speaking **or**	3
WRIT 101	College Writing	3	COMX 230	Presenting Technical Information	
M 141	Math For Business or Soc Sci I **or**	3	M 142	Math For Business or Soc Sci II **or**	3
M 151	Precalculus		M 171	Calculus I	
	Physical Science Elective	3		Physical Science Elective and lab*	4
	Free Elective	3		Humanities Elective	3
				Free Elective	2
		15			15

Sophomore

Fall Semester			Spring Semester		
BGEN 235	Business Law I	3	ACTG 202	Principles of Managerial Actg	3
BGEN 285	Critical Thinking and Deci Making	3	ECNS 202	Principles of Macroeconomics	3
ACTG 201	Principles of Financial Actg	3	STAT 216	Introduction to Statistics **or**	
ECNS 201	Principles of Microeconomics	3	STAT 131	Introduction to Biostatistics **or**	3
	Free Elective	3	STAT 332	Statistics for Scientists and Engineers	
				Free Elective	3
				Free Elective	3
		15			15

Junior

Fall Semester			Spring Semester		
BGEN 363	Business Ethics and Decision Making	3	BMIS 320	Business Modeling	3
BMIS 375	Data Analytics	3	BMKT 325	Marketing	3
BMIS 311	Management Information Systems	3	WRIT 322	Advanced Business Writing	3
MGMT 335	Management and Organization	3		Concentration Requirement/Elective	3
	Concentration Requirement/Elective	3		Concentration Requirement/Elective	3
		15			15

Senior

Fall Semester			Spring Semester		
BFIN 322	Business Finance	3	BMGT 426	Strategic Management	3
MGMT 322	Operations Management	3	BMIS 453	Bus Intel and Big Data Anal	3
	Concentration Requirement/Elective	3		Concentration Requirement/Elective	3
	Concentration Requirement/Elective	3		Concentration Requirement/Elective	3
	Concentration Requirement/Elective	3		Concentration Requirement/Elective	3
		15			15

* Students studying under the Natural Resource Management Option are required to take GEO 101 Introduction to Physical Geology which qualifies as a physical science elective and lab

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/20/2019
Dept. Business and Information Technology
Program Bachelor of Science

College CLSPS
CRC Representative David Hood #5

Description of Request: The Department of Business and Information Technology respectively requests approval to update prerequisites for a number of its business courses.

Current Course or Program Information: A number of current business courses have prerequisites that are either no longer required by the department or prerequisites that have not been enforced. These courses include (along with their currently listed prerequisites:

Course		Current Prerequisites
ACTG 301	Intermediate Accounting I	ACTG 202
ACTG 428	CPA Review	ACTG 420, ACTG 302, ACTG 402, ACTG 412, ACTG 436, ACTG 415, ACTG 427
ACTG 436	Advanced Accounting	ACTG 302 and BFIN 322
BMGT 329	Human Resource Management	BMGT 335
BMGT 322	Operations Management	CAPP 156 and STAT 216
BMGT 426	Strategic Management	BMKT 325, BMGT 335, BFIN 322
ECNS 201	Principles of Microeconomics	M 121
ECNS 203	Principles of Micro and Macroeconomics	M 122
BMIS 311	Management Information Systems	CAPP 158
BMIS 416	Enterprise Systems	CAPP 156
BMIS 453	Business Intelligence and Big Data Analy	STAT 216 or STAT 131 and CAPP 156
BGEN 360	International Business	Senior standing or consent of instructor

Proposed Change

Course # Name **Credits** **Pre-req.**

Course		Proposed Prerequisites
ACTG 301	Intermediate Accounting I	ACTG 201
ACTG 428	CPA Review	ACTG 302, ACTG 401, ACTG 410, ACTG 411
ACTG 436	Advanced Accounting	ACTG 302
BMGT 329	Human Resource Management	none
BMGT 322	Operations Management	STAT 216 or STAT 131
BMGT 426	Strategic Management	Senior standing
ECNS 201	Principles of Microeconomics	none
ECNS 203	Principles of Micro and Macroeconomics	none
BMIS 311	Management Information Systems	none
BMIS 416	Enterprise Systems	Junior standing or consent of instructor
BMIS 453	Business Intelligence and Big Data Analy	STAT 216 or STAT 131
BGEN 360	International Business	Junior standing or consent of instructor

List of supporting documentation attached:
This request includes a one-page summary of the above listing.

Assessment Leading to Request
This proposal has been thoroughly discussed by the department faculty members. The prerequisites have not been reviewed for a number of years and these changes better reflect current requirements for the listed courses.

Anticipated Impacts to "Other" Programs
There are no anticipated impacts to other programs.

Impact on Library:. It is believed there will be no incremental impact on library resources. Scott Juskiewicz was briefed on this proposal.

Date to take effect: The change will be incorporated in the 2019-20 Catalog.

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ **Date** 3/20/2019

Dean Approval Steven D. Gammon **Date** 03/25/2019

Graduate Council Approval _____ **Date** _____

CRC Approval _____ **Date** 3/25/19

Faculty Senate Approval _____ **Date** _____

VCAA Approval (see below) _____ **Date** _____

Chancellor Approval (see below) _____ **Date** _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

Establish a new course for the catalog (please contact the Registrar of MUS CCN information)

Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing

☒ 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

☐ New degree certification program of 29 credits or less

☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

Placing a postsecondary educational program into moratorium

☐ Withdrawing a postsecondary educational program from moratorium

☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more

☐ Establishing a B.A.S./A.A./A.S. area of study

☐ Offering an existing postsecondary educational program via distance or online delivery

☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

Re-titling an existing postsecondary educational program

☐ Terminating an existing postsecondary educational program

☐ Consolidating existing postsecondary educational programs

☐ Establishing a new minor where there is a major or an option in a major

☐ Revising a postsecondary educational program

☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years

☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

☐ Establishing a new postsecondary educational program

☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11

☐ Forming, eliminating or consolidating an academic, administrative, or research unit

☐ Re-titling an academic, administrative, or research unit

☐ Other:

Department of Business and Information Technology
Proposed Changes to the Prerequisites of Certain Courses
March 2019

Course		Current Prerequisites	Proposed Prerequisites
ACTG 301	Intermediate Accounting I	ACTG 202	ACTG 201
ACTG 428	CPA Review	ACTG 420, ACTG 302, ACTG 402, ACTG 412, ACTG 436, ACTG 415, ACTG 427	ACTG 302, ACTG 401, ACTG 410, ACTG 411
ACTG 436	Advanced Accounting	ACTG 302 and BFIN 322	ACTG 302
BMGT 329	Human Resource Management	BMGT 335	none
BMGT 322	Operations Management	CAPP 156 and STAT 216	STAT 216 or STAT 131
BMGT 426	Strategic Management	BMKT 325, BMGT 335, BFIN 322	Senior standing
ECNS 201	Principles of Microeconomics	M 121	none
ECNS 203	Principles of Micro and Macroeconomics	M 122	none
BMIS 311	Management Information Systems	CAPP 158	none
BMIS 416	Enterprise Systems	CAPP 156	Junior standing or consent of instructor
BMIS 453	Business Intelligence and Big Data Analy	STAT 216 or STAT 131 and CAPP 156	STAT 216 or STAT 131
BGEN 360	International Business	Senior standing or consent of instructor	Junior standing or consent of instructor

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 03/15/2019
Dept. Business and Information Technology College CLSPS
Program Business Minor CRC Representative David Hood

Description of Request: Add one course to the list of acceptable courses for the Business Minor Management Track and change an error in the listed course rubric for one of the existing courses under the Management Track of the minor.

Current Course or Program Information: The current business minor is a relatively popular program among non- business majors. The Management track has been expanded to include PET 446 Petroleum Project Evaluation and MIN 458 Mine Management, two business based courses taught outside of the business department. These courses are considered to have a significant amount of business content and are also currently allowed as concentration elective courses for students studying under our bachelor of Science program.
Also the Business Minor, as currently listed in the catalog, includes the course BUS 3316 which is the previous rubric for the current BMKT 325 Principles of Marketing course

Proposed Change

Course # Name	Credits	Pre-req.
Add MIN 408 Valuation of Mineral Properties as an elective under the Management Track of the Business Minor. This course is currently accepted as a concentration elective, as is PET 446 and MIN 458, for a number of business students studying under our BS program. As such, it is believed the MIN 408 course has the appropriate amount of business content to be included under the Management Track of the business minor. Also, this request includes a proposal to change the rubric for the Marketing course, as listed in the Business Minor under the current catalog, from the BUS 3316 to the corrected BMKT 325 Principles of Marketing.		

List of supporting documentation attached:
The new proposed business minor advising sheet is attached.

Assessment Leading to Request
After a number of conversations with the faculty of the Mining Engineering Department, the inclusion of MIN 408 was deemed appropriate.

Anticipated Impacts to "Other" Programs
None

Impact on Library:. It is believed there will be no incremental impact on library resources. Scott Juskiewicz was briefed on this proposal.

Date to take effect: The changes will be incorporated in the 2019-20 Catalog.

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ Date 3/20/2019

Dean Approval Steven D. Gammon Date 03/25/2019

Graduate Council Approval _____ Date _____

CRC Approval _____ Date 3/28/19

Faculty Senate Approval _____ Date _____

VCAA Approval (see below) _____ Date _____

Chancellor Approval (see below) _____ Date _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
- ☐ Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing
- ☒ 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
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☐ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit
- ☐ Other:

Department of Business and Information Technology
Business Administration Minor
Worksheet

Proposed March 2019

Name:	

Accounting Track				Grade/ Transfer
Required	ACTG	201	Principles of Financial Accounting	
	ACTG	202	Principles of Managerial Accounting	
	BFIN	322	Business Finance	
	ACTG	321	Accounting Information Systems	
Select Two	ACTG	410	Cost/Managerial Accounting I	
	ACTG	420	Cost/Managreial Accounting II	
	ACTG	301	Intermediate Accounting I	
	ACTG	302	Intermediate Accounting II	
	ACTG	401	Principles of Federal Tax - Individual	
	ACTG	411	Auditing I	

Management Track				Grade/ Transfer
Required	ACTG	201	Principles of Financial Accounting	
	BFIN	322	Business Finance	
	BMKT	325	Principles of Marketing	
Select One	BMGT	335	Management and Organization	
	MIN	458	Mine Management	
Select One	BMGT	362	Labor Relations	
	BGEN	363	Business Ethics	
	BMGT	329	Human Resource Management	
	BMGT	353	Organizational Behavior	
Select One	ACTG	202	Principles of Managerial Accounting	
	ACTG	410	Cost/Management Accounting I	
	BGEN	235	Business Law I	
	BMGT	322	Operations Management	
	BGEN	360	International Business	
	BFIN	455	Money, Capital Markets and Institutions	
	MIN	408	Valuation of Mineral Properties	
	PET	446	Petroleum Project Evaluation	

Signatures of Approval:

Student:		Date:
Advisor:		Date:
Business Department Head:		Date:

Montana Tech - Montana's Premier STEM University **2018-2019 Catalog**

[ARCHIVED CATALOG]

Business Administration Minor

The mining, minerals and energy industries, as well as other production/engineering oriented industries, have clearly indicated the need to obtain graduates who are trained in business concepts as well as in the fundamentals of their respective disciplines. Students who elect to pursue a minor in business must be currently enrolled in an approved major area of study at Montana Tech. **BIT students are not eligible to earn the business minors.**

Accounting Track (18 credits)

- ACTG 201 - Principles of Financial Accounting *3 credits*
- ACTG 202 - Principles of Mangerial Accounting *3 credits*
- BFIN 322 - Business Finance *3 credits*
- ACTG 321 - Accounting Information Systems *3 credits*

Electives: 6 credits from one of

- ACTG 410 - Cost/Mgmt Accounting I *3 credits*
- ACTG 420 - Cost/Mgmt Acct II *3 credits*
- ACTG 301 - Intermediate Accounting I *3 credits*
- ACTG 302 - Intermediate Accounting II *3 credits*
- ACTG 401 - Principles of Federal Taxation - Individuals *3 credits*
- ACTG 411 - Auditing I *3 credits*

Management Track (18 credits)

- ACTG 201 - Principles of Financial Accounting *3 credits*
- BFIN 322 - Business Finance *3 credits*
- BUS 3316 - *3 credits*

Electives: 3 credits from one of

- BMGT 335W - Management and Organization *3 credits*
- MIN 458 - Mine Management *3 credits*

Electives: 3 credits from one of

- BMGT 362 - Labor Relations & Collective Bargaining *3 credits*
- BGEN 363 - Business Ethics and Decision Making *3 credits*
- BMGT 329 - Human Resource Management *3 credits*
- BMGT 353W - Organizational Behavior *3 credits*

Electives: 3 credits from one of

- ACTG 202 - Principles of Mangerial Accounting *3 credits*
- ACTG 410 - Cost/Mgmt Accounting I *3 credits*
- BGEN 235 - Business Law *3 credits*
- BMGT 322 - Operations Management *3 credits*
- BGEN 360 - International Business *3 credits*
- BFIN 455 - Money, Capital Markets, and Institutions *3 credits*
- PET 446 - Petroleum Project Evaluation *3 credits*

18 Total credits required for Business Administration Minor

Janet Cornish, Writing Program Adjunct Instructor

954 Caledonia Street, Butte, MT 59701-9002

TO: Dr. Charie Faught, President, Faculty Senate
FROM: Janet Cornish JC
RE: Proposed EAL Committee - Initial Thoughts
DATE: April 3rd, 2019

Over time, our student body has become more diverse, representing students from all over the world. This has been an enriching experience for all of us; however, it has also been a challenging one. Increasingly, I have observed, as have many of my colleagues, that many of our international students would benefit from additional help as they navigate through academia. This help could take a number of forms but would focus on providing assistance in developing English language skills, in engaging with other students in group settings and in becoming better acquainted with the concept of academic honesty in preparing writing assignments.

On March 27th, 2019, Dr. Dawn Atkinson, Director of the Montana Tech Writing Program, gave an excellent presentation on developing strategies for teaching EAL (English as an Additional Language) students. During the presentation, attendees explored the opportunities and challenges associated with teaching international students, and we reached a consensus. We determined that it would be worthwhile to establish a committee to address the needs of our international students and their instructors.

I am excited at the prospect of creating a committee, with Faculty Senate approval, to serve the needs of both EAL students and their instructors and would gladly serve as chair. Here are my initial thoughts for consideration:

Overview

- Mission of the Committee: The mission of the committee is to identify and implement ways to provide support for our EAL students, to improve their English language skills, their level of engagement and their understanding of the responsibilities of being a student.

- Overall Scope: The committee would be administratively housed within the Writing Program, but its focus would be campus-wide.

Memo

PHONE 406-723-7993
FAX 406-723-7993
WEB cdsofmontana.com

- Committee composition: The committee would be comprised of staff and faculty and have approximately seven to nine members. To date, several members of the faculty have indicated an interest in participating, including those for whom English was not their first language.

- Initial issues to be addressed:
    - EAL (English as an Additional Language) learning challenges
    - Academic honesty and student responsibilities
    - Engagement with other students, faculty and staff to assure better outcomes

- Strategies that the committee might formulate:
    - Classroom-based
    - Support Services-based
        - ACE
        - Margie Pascoe's program
        - Residence Halls
        - Other
    - Policy/Administrative-based

Logistical and Administrative Concerns

- Committee Tenure: I propose that the committee work more actively for the first two to three years, meeting monthly to generate ideas and strategies for implementation. After this initial period, the committee would re-evaluate its work to determine whether a less active schedule would be more appropriate. It could even function on an as-needed basis.

- Committee Reporting: The committee would report to the Faculty Senate twice each semester during its active periods.

- Campus Interest: As noted above, there has already been an enthusiastic response from members of the faculty who are interested in serving on an EAL committee. I will also contact Margie Pascoe, Director of International Services and Carrie Vath, Associate Vice Chancellor of Enrollment and Dean of Students to seek their participation and input.

- Potential Overlap with other Committee Efforts: A review of the current Faculty Senate committees revealed only one committee, Instruction Improvement, that might already be addressing this issue. However, this committee is currently inactive.

Thank you very much for your consideration of this proposal. I would be pleased to answer any questions.

Course Application

1. Course number and title: M 140 - College Mathematics for Health Care

2. Course credits	3. Course prerequisites	4. Last semester offered	5. Next semester offered
3	M 095	Spring 2018	Fall 2018

6. Course outcomes

1. Apply knowledge of decimals, fractions, and percents to solve algebraic linear equations in the healthcare field.
2. Understand rational equations and use knowledge of rational equations to solve problems involving ratios and proportions (including but not limited to volume, mass, weight and temperature) .
3. Be able to use the fundamental units of the metric system (SI), household units, and the apothecary system in making measurements and doing calculations related to allied health applications.
4. Interpret the meaning of range, standard deviation, and the coefficient of variation in applied situations.
5. Use and apply the basic probability concepts: probability models (Venn diagrams, two-way tables), sample spaces with equally likely outcomes (counting), probability distributions.
6. Use and apply the rudiments of statistics: measures of center and spread, the normal distribution.
7. Understand and interpret exponential and logarithmic functions and graphs.

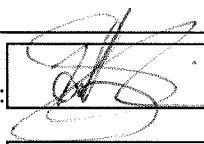
7. General education student outcomes students taking this course will satisfy:

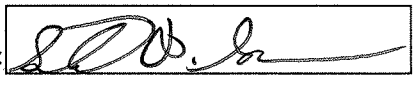
- ❑ Students will be able to use writing as a means to engage in critical inquiry by exploring ideas, challenging assumptions, and reflecting on and applying the writing process.
- ❑ Students will be able to speak with clarity, accuracy, and fluency in public contexts.
- ☑ Students will be able to reason analytically and quantitatively at an algebraic level.
- ❑ Students will be able to use an understanding of the physical and natural world to identify and solve problems.
- ❑ Students will demonstrate an understanding of ethics, cultural endeavors, and legacies of world civilizations.
- ❑ Students will be able to describe the biological, social, political, and economic forces that influence human behaviors and attitudes.
- ❑ Students will be able to demonstrate the processes and proficiencies involved with creating and/or interpreting creative works.
- ❑ Students will be able to demonstrate proficient critical thinking skills.

8. **Please attach or include the following:**

- ☑ CRC paperwork with approval (if applicable)
- ☑ Course syllabus
- ☑ A summary of course assignments that address the student outcomes checked in (7). Use space below.

In class Quizzes (approximately 15)
In class Exams (3 including a comprehensive final)

Dept. Head Approval: 

College Dean Approval: 

General Education Committee Approval:

Faculty Senate Approval:

- ❑ Communications
- ❑ Humanities/Fine Arts
- ❑ Mathematics
- ❑ Physical & Life Sciences
- ❑ Social Sciences

For Committee use only.

M 140 – College Mathematics for Health Care
Spring 2019

Instructor	Dr. Hilary Risser hrisser@mtech.edu 406-496-4581
Office hours	MW 10:00AM -11:00AM (North campus) TR 2:15PM – 2:45PM (Highlands)
Required text and materials	Mathematics for Health Sciences: A Comprehensive Approach (1st edition) by Joel R. Helms Math in Society: A Survey of Mathematics for the Liberal Arts Major version 2.5 by David Lippman http://www.opentextbookstore.com/mathinsociety/2.5/Probability.pdf Scientific or graphing calculator
Learning Outcomes	1. Apply knowledge of decimals, fractions, and percents to solve algebraic linear equations in the healthcare field. 2. Understand rational equations and use knowledge of rational equations to solve problems involving ratios and proportions (including but not limited to volume, mass, weight and temperature) . 3. Be able to use the fundamental units of the metric system (SI), household units, and the apothecary system in making measurements and doing calculations related to allied health applications. 4. Interpret the meaning of range, standard deviation, and the coefficient of variation in applied situations. 5. Use and apply the basic probability concepts: probability models (Venn diagrams, two-way tables), sample spaces with equally likely outcomes (counting), probability distributions. 6. Use and apply the rudiments of statistics: measures of center and spread, the normal distribution. 7. Understand and interpret exponential and logarithmic functions and graphs. 8. Apply knowledge of logarithmic functions to solve problems in the healthcare. 9. Apply mathematical and statistical reasoning to a variety of applied or theoretical healthcare problems.
Important dates:	Last day to drop without class appearing on transcript: January 28th Last day to withdraw with an automatic "W": March 26th Final Exam: May 1st 3PM

Class Policies:

Academic Dishonesty: Academic Dishonesty as defined in the student handbook will not be tolerated. Any violations of the policy will result in all involved parties receiving a 0 on the assignment in question. All violations will also be reported to the provost.

Attendance: Attendance is required and will be taken daily. You are expected to be on-time and remain the entire class time. You should sign in on the sign in sheet every day. If you didn't sign in, you weren't there. Responsibility for work missed because of illness or school business is placed upon the student. Attendance will be considered for students with a grade of D+.

Evaluation and Measurement:

Homework: These problems are listed on the syllabus. The problems on quizzes and tests will be similar to these problems. Questions concerning these problems will be answered during class. However, these problems will not be collected or graded.

Exam: There will be three exams, including a final exam. The exams during the semester will be announced approximately one week in advance. Makeup exams will be available for one calendar week after the missed exam. If the missed exam is not made up by that time, you will receive a zero. Documentation must be provided to receive a makeup exam. Scientific calculators will be allowed on all exams. The final exam will be comprehensive.

Quizzes: There will be weekly quizzes on the material. The quizzes will not be announced in advance. I will drop the lowest four to five quizzes. Makeup quizzes are not available.

Grade distribution:

3 exams @ 20% each	= 60%
10 quizzes @ 4% each	= 40%

Structure of the Course:

Before class: Before each class meeting, you should attempt the homework listed on the syllabus and check the odd numbered problems in the back of the book. You should mark questions that are not correct. If you have a small number of homework questions that you need help with, you can bring those to class for help. If you have a lot of questions that you need help with, you should bring those questions by my office for individual help. Generally, the homework problems should take between 1 and 2 hours to complete. Remember that the homework is designed to give you practice. I will not collect or grade the work.

Beginning of class: At the beginning of class, I will go over about 3-4 questions on the assigned homework problems from the book.

Lecture: I will introduce a topic via a short lecture and a small number of worked examples. I usually use even numbered problems from the homework in my lectures.

Independent/Group Work: After the short lecture, I will ask you to work independently or in small groups on even numbered homework problems. I will walk around and help you as you work through these problems. We will primarily be working books out of the text. Please make sure that you have access to those problems every day.

Quizzes: Be sure that you have your calculator in class each day. You will be able to use it on your quizzes. Quizzes will be given at the end of a class period. Once you finish your quiz, you may leave.

Topics Covered:

Objective	Homework
Solve linear equations	2.1 (17-42) 2.3 (61-65)
Write a linear equation for a situation	2.1 (43, 44)
Solve mixture problems	2.2 (1-15)
Evaluate formulas for a given value	2.4 (21-28, 35-38)
Solve problems using ratio and proportions	2.5 (19-40)
Solve percent problems	2.6 (25-36)
Simplify exponential expressions	2.7 (1-34)
Convert between scientific and standard notation	2.8 (1-40, 59-62)
Simplify expressions given in scientific notation	2.8 (41-58)
Simplify units using dimensional analysis	3.1 (1-20)
Convert units within the metric system	3.2 (1-41)
Convert between metric and nonmetric systems	3.3 (1-26)
Convert between apothecary and household systems	3.4 (1-17)
Convert between Celsius and Fahrenheit	3.5 (1-16)
Exam 1	
Solve single dilution problems	4.1 (1-31)
Determine final concentrations	4.2 (1-5, 10-12)
Solve dilution problems of two solutions	4.3 (1-18)
Solve problems using percent volume	4.4 (5-13)
Read and interpret drug orders	5.1 (1-9)
Read and interpret drug labels	5.1 (10-16)
Calculate drug orders	5.2 (1-23)
Calculate volume of drug to satisfy an order	5.3 (10-19)
Identify volume of drug in a syringe	5.3 (1-9)
Calculate the volume that is required when medicine is provided in powdered form	5.4 (1-7)
Perform intravenous calculations	5.5 (1-22)
Perform titration calculations	5.6 (1-11)
Calculate drug dosages based on body weight	5.7 (1-7)
Determine if a physician's order is appropriate	5.7 (8-22)
Calculate drug dosages based on BSA	5.8 (1-10)
Calculate drug dosages based on BSA using the West Nomogram chart	5.8 (11-20)

Exam 2	
Plot ordered pairs on the coordinate plane	6.1 (2)
Determine the slope of a line given a graph or two points	6.2 (1-7, 8-15)
Graph a linear equation using slope and y-intercept	6.3 (1-16)
Read and interpret linear and nonlinear graphs	6.5 (1-9)
Determine if a graph represents a function	7.1 (1-6)
Graph inequalities	7.1 (14-25)
Graph exponential functions	7.2 (1-12)
Solve applications involving exponential functions	7.3 (5-12)
Expand and condense logarithmic expressions	7.4 (17-29)
Determine the pH of a solution	7.5 (1-6)
Create a frequency table	9.2 (1-7)
Construct graphs from tables	9.4 (1-10)
Calculate the mean, median, and mode of a data set	10.1 (1-9)
Compute the standard deviation of a data set	10.2 (1-6)
Compute percentages that fall within a range of data values for normally distributed data	10.3 (2-6)
Calculate percentiles	10.5 (1-6)
Compute basic probabilities	12 (1-10)
Find probability for and/or events	12 (17-22, 27-30,33, 34)
Compute conditional probabilities	12 (41-48)
Compute probabilities using permutations and combinations	12 (49-57)
Final Exam	

M 140
Test 1A

Name Key
Calculator allowed – 75 minutes

1. Solve $3(x-4)=15$. (10 points)

$3x-12=15$

$3x=27$

$\boxed{x=9}$

2. Perform the temperature conversions. (10 points)

a. $28°F =$ 270.92 K

$28=1.8x-459.67$

$487.67=1.8x$

$=x$

b. $30°C =$ 86 °F

$x=(30\times1.8)+32$

$=54+32$

$=86$

3. Find the value of x given $y=5$. (5 points)

$z=3y+1$

$x=\frac{3z}{2}-1$

$z=15+1=16$

$x=\frac{3(16)}{2}-1$

$=23$

$\boxed{x=23}$

4. Every 5mL of a solution contains 100 mg of a drug. How many mL of a solution do you need to administer to give a dose of 65mg? (10 points)

$\frac{\text{drug}}{\text{sol}} \Rightarrow \frac{100\text{ mg}}{5\text{mL}} = \frac{65\text{ mg}}{x\text{ mL}}$

$100x=65(5)$

$100x=325$

$\boxed{x=3.25\text{ mL}}$

5. If 20 patients out of every 200 have a false negative result on a flu tests, what percent get a false negative? (5 points)

$$\frac{20}{200} = .1 = 10\%$$

6. 3% of patients with strep symptoms test positive for the strep virus. If you have 1500 patients with strep symptoms, how many would you expect to test positive? (5 points)

$$(.03)(1500) = 45 \text{ patients}$$

7. Perform the conversions. (20 points)

a. 2300 cm = 230 dm

$$2300 \text{ cm} \cdot \frac{10^{-2} \text{ m}}{1 \text{ cm}} \cdot \frac{1 \text{ dm}}{10^{-1} \text{ m}} = 2300 \times 10^{-2} \times 10^{1} = 230$$

b. 12 g/dL = 1200 mg/cL

$$\frac{12 \text{ g}}{1 \text{ dL}} \cdot \frac{1 \text{ dL}}{10^{-1} \text{ L}} \cdot \frac{10^{-2} \text{ L}}{1 \text{ cL}} \cdot \frac{1 \text{ mg}}{10^{-3} \text{ g}} = 12 \times 10^{-2} \times 10^{1} \times 10^{3} = 1200$$

8. Convert the number to standard form. (5 points)

6.32×10^{-3}

0.00632

9. Convert the number to scientific notation. (5 points)

$36{,}005$

3.6005×10^{4}

10. Simplify and express your answer with positive exponents. (4 points)

a. $\frac{x^4}{x^{-1}} = x^4 \cdot x^1 = x^5$

b. $y^0 x^{-3} = \frac{1}{x^3}$

11. How many liters of a 30% lidocaine solution should be mixed with 3L of a 5% lidocaine solution to obtain a 10% solution of lidocaine? (6 points)

$.30(x) + .05(3) = .10(3 + x)$

$.3x + .15 = .3 + .1x$

$.2x = .15$

$\boxed{x = .75 \text{ L}}$

12. Perform the conversions. (15 points)

a. 8 fl. dr. = 0.0625 pt

$$8 \text{ fl dr} \cdot \frac{1 \text{ fl. oz}}{8 \text{ fl. dr.}} \cdot \frac{1 \text{ pt}}{16 \text{ fl. oz}} = \frac{1}{16} = 0.0625$$

b. 1 L = 4.24 cups

$$1 \text{ L} \cdot \frac{1.06 \text{ qt}}{1 \text{ L}} \cdot \frac{4 \text{ cups}}{1 \text{ qt}} = (1.06)(4) = 4.24$$

M 140
Test 1B

Name Key
Calculator allowed – 75 minutes

1. Solve $4(x-3)=20$. (10 points)

$4x - 12 = 20$

$4x = 32$

$\boxed{x = 8}$

2. Perform the temperature conversions. (10 points)

a. $30°F =$ 272.03 K

$30 = 1.8x - 459.67$

$489.67 = 1.8x$

$272.03 = x$

b. $28°C =$ 82.4 °F

$x = (28 \times 1.8) + 32$

$= 50.4 + 32$

$= 82.4$

3. Find the value of x given $y = 3$. (5 points)

$z = 2y + 1$ $\quad z = 6 + 1 = 7$

$x = \frac{3z}{2} - 1$ $\quad x = \frac{21}{2} - 1$

$x = 9.5$

$\boxed{x = 9.5}$

4. Every 5mL of a solution contains 50 mg of a drug. How many mL of a solution do you need to administer to give a dose of 65mg? (10 points)

$\frac{\text{drug}}{\text{sol}} \Rightarrow \frac{50\text{mg}}{5\text{mL}} = \frac{65\text{mg}}{x\text{ mL}}$

$65(5) = 50x$

$325 = 50x$

$\boxed{6.5\text{mL} = x}$

5. If 40 patients out of every 200 have a false negative result on a flu tests, what percent get a false negative? (5 points)

$$\frac{40}{200} = .2 = 20\%$$

6. 3% of patients with strep symptoms test positive for the strep virus. If you have 1200 patients with strep symptoms, how many would you expect to test positive? (5 points)

$$(.03)(1200) = 36 \text{ patients}$$

7. Perform the conversions. (20 points)

a. 2300 dm = 23000 cm

$$2300\,\text{dm} \cdot \frac{10^{-1}\,\text{m}}{1\,\text{dm}} \cdot \frac{1\,\text{cm}}{10^{-2}\,\text{m}} = 2300 \times 10^{-1} \times 10^{2} = 23{,}000$$

b. 12 mg/dL = .0012 g/cL

$$\frac{12\,\text{mg}}{\text{dL}} \cdot \frac{1\,\text{dL}}{10^{-1}\,\text{L}} \cdot \frac{10^{-2}\,\text{L}}{1\,\text{cL}} \cdot \frac{10^{-3}\,\text{g}}{1\,\text{mg}} = 12 \times 10^{-2} \times 10^{1} \times 10^{-3} = 12 \times 10^{-4}$$

8. Convert the number to standard form. (5 points)

$3{,}32 \times 10^{-2}$

0.0332

9. Convert the number to scientific notation. (5 points)

3,605.

3.605×10^3

10. Simplify and express your answer with positive exponents. (2 points)

a. $\frac{x^4}{x^{-2}} = x^4 \cdot x^2 = x^6$

b. $y^{-3}x^0 = \frac{1}{y^3}$

11. How many liters of a 30% lidocaine solution should be mixed with 4L of a 5% lidocaine solution to obtain a 10% solution of lidocaine? (8 points)

$.30(x) + .05(4) = .10(x + 4)$

$.3x + .2 = .1x + .4$

$.2x + .2 = .4$

$.2x = .2$

$x = 1\text{L}$

12. Perform the conversions. (15 points)

a. 1 L = 4.24 cups

$$1\text{ L} \cdot \frac{1.06\text{ qt}}{1\text{ L}} \cdot \frac{4\text{ cups}}{1\text{ qt}} = (1.06)(4) = 4.24$$

b. 8 fl. dr. = 0.0625 pt

$$8\text{ fl. dr.} \cdot \frac{1\text{ fl. oz}}{8\text{ fl. dr.}} \cdot \frac{1\text{ pt}}{16\text{ fl. oz}} = \frac{1}{16} = 0.0625$$