

## Faculty Senate Minutes

3/15/2019

10-11 a.m.

Mill 201

Attendance: Stella Capoccia, Charie Faight, Scott Risser, Phil Curtiss, Miriam Young, Diane Wolfgram, Peter Lucon, Tony Patrick, Dan Autenrieth, Ulana Holtz, Jeanne Larson (for Katherine Zodrow), Vickie Petritz, Kishor Shrestha, Tom Moon (for Matt Donnelly), Doug Abbott, Ron White, Jim Handley (for Atish Mitra), Mary North-Abbott, Karen Wesenberg-Ward, Chad Okrusch, Rita Spear, Courtney Young,

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

Motion to approve and seconded. **Motion passes.**

### Action Items

II. CRC Recommendations- see attachments from meeting minutes.

- a. Rename major of Geophysical Engineering to Geophysics with revision of curriculum
- b. Course changes for Business and Information Technology
- c. Create Data Science minor, a course in Geophysics, and an option in Statistics within the Mathematics major
- d. Reinstate HCI option within B&IT major
- e. Moratoria for 14 options in CS and SE, Certificate of CNA, major in Statistics, and programs in HCI

Move to accept the recommendations as written and seconded. **Motion passes.**

### Informational Items

III. Committee updates:

a. Teaching Community

None present, but webinar from OCHE and other campuses. Bill Ryan will be reviewing and bringing back to campus.

b. Research Mentors

No update at this time.

c. Budget

More of the same. Working on determining fees. Spent some time on parking, not sure of the results. May be charging everyone a fee (no free parking). Provost indicates that Deans may be having budget meetings.

Mandatory fees were due March 1<sup>st</sup> in consultation with ASMT is considering raising health and entertainment fees. Non-mandatory fees are due April 15, such as program and course fees. Chair asks if faculty senate interested in reviewing or going through department chairs or deans. No comments from senators.

d. Campus Committee Assessment

Who needs to keep track of which committee still in the works, with more to report at a later date.

e. Chancellor Search Advisory Committee

The search is ongoing. Neutral site interviews and semi-finalists are occurring now. Finalists will occur soon and will be made public. Planned campus interviews will be published on the website. Not a decision yet on how many finalists- the committee will have to decide. UM had four finalists. Good sign to have more (if have a number of good candidates), but if fewer then there may be better likelihood that one would take the position if offered.

#### IV. Board of Regents Meeting – report from officers

Highlights at the BOR Meeting are a focus on dual enrollment (Helena College as an example of doing this well). Also budgeting and performance based budgeting still in the works. Will focus on program reviews and have higher levels of scrutiny (as mentioned in previous meetings such as program prioritization).

Breakfast focused on two topics. The first topic was common course numbering. The takeaway is that disciplines that have embraced has worked well, and that the process increases transferability, and works well for smaller depts. For upper level more specific transfers are more difficult and credits can be lost. An acknowledgement was given that a tremendous amount of work by enrollment, working towards 80% transferability. Course sub forms being reviewed by both enrollment and advisors within a department will still occur. Will look at transfers to 2-4 year for those with same name of programs (like Biology or Computer Science) to review differences and have the transfers easier.

Articulation agreements and learning outcomes will help with this work. Chair recommends that each course should have learning outcomes for each class (and have them published).

What happens when a person does take a course with the same name? Should transfer over if the same name (the whole point). Nursing does have articulation agreements with other pre-nursing agreements across the state.

If have a course with the same outcomes as another course with a different name should look to combine, but not being forced.

The second topic was the use of adjuncts and part time faculty. Different schools use the terms differently. For instance, MSU- if have someone part time and not tenured not called an adjunct. Spoke about terminology differences and how these professionals could be part of tenure and promotion. In a strange spot to rely less on adjuncts but using for budgeting purposes. Adjuncts not subject to an increase in pay or how many courses that they can teach (can become full time). How do we as a system protect adjunct position and when do we use (such as core courses or with specialized knowledge). One of the comments was how do we provide security for adjuncts.

The officers commented that the meeting and the breakfast was productive and good to learn from others.

Tech had emeritus faculty approved on the BOR agenda.

Provost submitted Masters of Engineering submitted in October, which was temporarily lost, but now found. Provost indicates no pushback from MSU based on response to intent to plan.

#### V. Senate Officers

After department elections, can have faculty officer elections. Will have March 28 officer elections (Chair, Vice- Chair, and Secretary). Can probably have nominations from today until the time of the election (can send to Chair or secretary). Someone can be nominated and elected without being present or consent, but chair recommends communication. Provost and Chancellor have agreed to a one course buy out. Hope to have time to work with department head or dean to determine how that will work.

Chair indicates that until faculty senate changes the bylaws, the faculty senate positions still exist for programs that are going into moratorium (despite the fact of programs existing). The officers need to be members of the faculty senate (needs to be a sitting senator).

If we make nominations, can be sent via e-mail, but can be also verbalized during today's meeting (but may need a second).

Question regarding if one of the people changing hats, should we make a motion to change the bylaws first, such as those in moratorium. Answer from chair that the full faculty needs to vote on bylaws changes, so would take longer.

Is there a plan to call a faculty wide meeting this semester? Answer from chair that it is up to the group. One decision to make is the faculty senate satisfaction survey and what to do.

There is a rotating basis on some faculty senate members. Some are up for changes, others are not. An e-mail was sent to impacted department. Those announced at the meeting: Chris Gammons for Geological Engineering, John Ray for Liberal Studies. Miriam Young will continue for Nursing, as will Vicki Petritz for Business and Accounting Technology. Peter Lucon will also need to be updated (inaccurate in the date). Mary North Abbott for Petroleum should change to 2020, Dan Autenrieth for Safety, Health, and Industrial Hygiene change to 2020. Kishor Shrestha from Civil Engineering until 2020.

Comment that should begin reconciling the process of who is represented sooner rather than later, such as PTC. Needs to come from faculty senate, should start process today. Motion to begin reconciling senate membership to programs undergoing moratorium. Question about having full faculty vote and asking for objections only. Response from the chair that not acceptable. Concern that if students still in the program, then should still have faculty senate membership until students have completed the program. No second to the motion.

## Discussion Items

- VI. Other Items – what other items would faculty senate like to get accomplished? Surveys are an example. Move that we have a full faculty meeting. Comment that it should be in April (since graduation May 7). Motion seconded. Would help to have a handover of chairs and large events. Motion to hold a full faculty in mid-April passes. Chair asks for finding a date and place. Chair appoints Stella and Mary to find a date and time, to include consideration of agenda items (may include chancellor search committee).

Taken aback to hear that we need to move from faculty senate to start survey for this year. Should continue from the faculty senate and recommend continuing and do every year. Made into a motion and seconded. Amend that should include investigating placing in the bylaws. Move to bring to faculty and ask that it be include in the bylaws a faculty survey part of the annual work of the faculty senate. (Mandatory in the bylaws). Motion Passed. Will need the full faculty meeting to approve. Chair reticent since no longer a senator, but from comments want to do. Question regarding should bring back current survey to faculty senate or a subcommittee. Motion to bring to faculty senate and then to send to subcommittee to generate and send out. Motion seconded. Question that may not need subcommittee, so should determine at the next meeting, if needed. **Motion passes (with amendment).**

Regional accreditation coming up- is there anything we need to do or prepare as a group. Provost response that the NW seven year visit was last year, so currently writing the year one report. Another visit won't occur for a few years.

Motion to adjourn and seconded.

V. Senator elections (bylaws below)

#### **Article IV. Elections**

(Article IV, Section 1 replaced by following according to faculty action 10/21/2011.)

##### **SECTION 1:**

Membership in the Faculty Senate shall be determined by annual elections held in March at the department level. Only persons holding faculty rank are eligible to vote, except in the case of Adjunct Faculty. Members shall be elected to two-year or three-year terms at the option of their respective departments. Vacancies created by unexpired terms shall be filled by special election.

#### **Article V. Organization**

##### **SECTION 1: Officers**

The officers shall consist of a Chairperson, Vice-Chairperson, and Secretary. These officers shall be elected from the total membership of the Faculty Senate at the initial meeting after its annual election.

##### **SECTION 2: Duties of Officers**

The Chairperson shall be the principal executive officer and shall have such powers as are appropriate to the office. The Chairperson shall appoint committees and shall be an ex-officio member of all committees except the Nominating Committee.

The Vice-Chairperson shall fulfill the duties of the Chairperson in the Chairperson's absence and shall, otherwise, serve as an assistant to the Chairperson.

The Secretary is responsible for the usual functions of the office, such as:

1. Keeping the minutes of all regular meetings of the Faculty Senate and making available copies to the entire professional staff and the Chancellor.
2. Maintaining archives of important papers of the Faculty Senate.
3. Furnishing notification of all Faculty Senate meetings to all faculty members.
4. Carrying on pertinent correspondence relative to the Faculty Senate and its activities.

CRC Meeting Notes:

4/22/19:

Geophysics curriculum Change and addition. All curriculum changes accepted and GEOP 101 back into curriculum.

**Motioned, seconded, approved by the CRC**

Discussion debate and issues regarding sign-in items into Moratorium. Per Scott Risser the department head and the programs own the curriculum and per current faculty senate nothing can be sent forward in Protest.

Pat Monday noted that in Montana law items are often forwarded and voted in as "in protest" and are accepted.

Scott Risser reiterated that his stance of chair for the Faculty Senate is that no item will go forward if it is "signed in protest"

Motioned and passed to keep Statistics Moratorium to stand as is with informational discussions from Faculty Senate.

Mathematics. Adding of a statistical option to a major in mathematics to incorporate some of the Data science course.

Adding of Advanced Calculus II.

Need 4 credits of 7 General Education Electives to satisfy the Statistics option.

General Education electives can be of any level.

BOR requirements have been met.

**Motioned, seconded, Approved by the CRC.**

Change BMIS 375 Business Modeling II to BMIS 375 Data analytics.

Change due to changes of software and applications and enable a broader range of software packages.

This course will be unique to MT Tech and this will have to through common course numbering. Course descriptions changed.

**Motioned, Seconded, Approved by CRC.**

BS BIT, HIT

Reinstate BS Business and Information Technology, Health, Information Technology. Pull from Moratorium. (Never went to BOR). This was removed from the catalog and placed Moratorium.

Charrie Faught. Change and additions with Business Information Technology will come forward later with specific curriculum changes. HIT and BIT options will combine as recommended by PPC not was removed due to the HCI program. Now without HCI, HIT is relevant to return.

**Motioned, Seconded, Approved by CRC.**

#### Data Science

Create a minor in data science. Petition from the petroleum department and its advisory committees. Other departments have shown interest and it is believed that it will increase employability in the field.

Business department will use this to replace an IT focus.

**Motioned, Seconded, Approved by the CRC.**

#### HCI

Place BA, AS, HCI into moratorium, Charrie Faught is discussion this change with additions and cooperation of the combination of the BIT program.

This can be placed in moratorium.

**Motioned, Seconded, Approved by the CRC**

#### PTC.

Place BS PTC (all options) into moratorium

MS Technical Communications into moratorium

Grad Cert in Tech Communications into moratorium.

Grad council voted 5 to 4 not to accept the moratorium.

**Tabled**

#### Computer Science and Software Engineering.

Eliminate 7 options.

Keep BS computer Science

Keep BS software

Issues and ideas acquired from PPC.

These options have current students so these will need to be placed into moratorium.

Motion to move these options into moratorium (no new students to this option).

(if a student has met the requirements and declares from an established catalog it will be awarded).

Motion to take the 7 options and changes the word elimination to Moratorium for the two degrees BS computer science and BS software.

**Motioned, Seconded, Approved by the CRC.**

#### CNA

Termination of the Certified Nursing Assistant Certification from Highland's college.

(need moratorium form). PPC recommended. Currently the Spring Semester (2019) has 4

This termination will not effect current students.

**Motioned, Seconded, Approved by the CRC.**

# MontanaTech

Curriculum Change Request Form Dated 6 September 2018

Date 01/14/19

Dept. Geophysical Engineering  
Program Geophysical Engineering

College SME  
CRC Representative Marv Speece

Description of Request: Change name of degree from "BS Geophysical Engineering" to "BS Geophysics". Reduce number of credits from 128 to 120. Drop EGEN 101, EGEN 201, EGEN elective, PHSX 322, EGEN 325. Add PHYS 453, GEOP 101, and a technical elective. Add GEOE 357 to the approved list of GEOE electives. Add a technical elective that includes all the approved GEOE electives and M 405, M 420, GEOP 4XX (Remote Sensing), GEOP 4XX (Petrophysics). Move HSS elective from freshman year second semester to junior year second semester.

Current Course or Program Information: See attached curriculum worksheets.

## Proposed Change

Course # Name	Credits	Pre-req.
<u>Drop</u>		
EGEN 101, Intro to Eng. Calc. & Problem Solv. I	3	
EGEN 201, Eng. Mech – Statics	3	
EGEN elective, EGEN 202, EGEN 305, EGEN 324, EGEN 335	3	
PHSX 322, Electronics for Scientists	3	
EGEN 325, Engineering Econ Analysis	3	
<u>Add</u>		
PHSX 453, Math Methods of Physics	3	PHSX 237; M 274 or Consent of Instructor
GEOP 101, Introduction to Geophysics	1	M 151
Technical elective:		
M 405, M 410, GEO 257, GEOP 4XX (Remote Sensing), GEOP 4XX (Petrophysics), GEOE 357, GEOE 406, GEOE 410, GEOE 411, GEOE 420, GEOE 422, MIN 418, PET 348		
Course appropriate to student and approved by advisor	3	
GEOE 357 to the approved list of GEOE electives		
<u>Move</u>		
HSS elective from freshman year second semester to junior year second semester.		

### List of supporting documentation attached:

See old and new curriculum worksheet

### Assessment Leading to Request

Program prioritization

### Anticipated Impacts to "Other" Programs

None

Impact on Library: No consultation is required because this is primary a degree name change and we do not propose any new courses at this time except for GEOP 101.

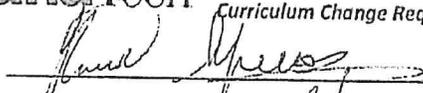
Date to take effect: Fall semester, 2019. Note that Montana Tech will retain the old degree and curriculum until the geophysical engineering degree is retired after the teach-out.

# MontanaTech

Curriculum Change Request Form Dated 6 September 2018

## APPROVALS

Department Head Approval

 Date 1-24-19

Dean Approval

 Date 1-25-19

Graduate Council Approval

 Date 2-22-19

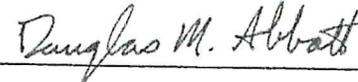
CRC Approval

\_\_\_\_\_ Date \_\_\_\_\_

Faculty Senate Approval

\_\_\_\_\_ Date \_\_\_\_\_

VCAA Approval (see below)

 Date 1/25/19

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:

Date 2/7/2019

Dept. Business and Information Technology  
Program

College CLSPS  
CRC Representative David Hood

**Description of Request:** Change the BMIS 375 Business Modeling II course to BMIS 375 Data Analytics to highlight the data analytics content and add a lab where students gain experience with Data Science software. All of the topics previously covered in Business Modeling II will be covered with expanded content to support courses in the Data Science and Computer Science and data-driven topic areas in business.

**Current Course or Program Information:**

BMIS 375 - Business Modeling II

3 credits (Hrs: 2 @ 75 minute lectures)

Through the use of exercises and case studies of advanced complexity, students will add to knowledge and skills acquired in Business BMIS 275 and in other business courses to develop creative and innovative solutions to a variety of business problems, while gaining additional proficiency in the use of the advanced features of Microsoft Excel and Microsoft Access.

Prerequisite: BMIS 320 Business Modeling I

**Proposed Change**

Course # Name	Credits	Pre-req.
BMIS 375 Data Analytics	3 credits (2 @ 50 min. lectures, 1 @ 3hrs. lab)	STAT 216 or STAT 332
Using an agile project management methodology, students will develop knowledge and skills in data analytics to provide creative and innovative solutions to a variety of business, science, and engineering problems, while gaining proficiency in the use of current data analytics software.		

**List of supporting documentation attached:**

1. Course Syllabus (including Course Outcomes)

**Assessment Leading to Request**

The changes in the data-driven business environment and the development of a Data Science minor revealed a deficient in courses covering topics central to the journey from data to information to knowledge. These changes will allow students from a wide variety of fields of study to engage with the transformation of data to actionable knowledge using the latest techniques and toolsets in the field of analytics.

**Anticipated Impacts to "Other" Programs**

This course will be added to the Data Science curriculum. In the Computer Science program, it is replacing CSCI 340 and in Business and IT, it is replacing Business Modeling II.

**Impact on Library**

**Date to take effect:** 8/19

# MontanaTech

Curriculum Change Request Form Dated 7 February 2019

## APPROVALS

Department Head Approval



Date 2/8/2019

Dean Approval



Date 2/11/19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval



Date 2-22-19

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:

## Montana Technological University

### **BMIS 375 - Business Modeling II**

**Fall Semester 2019 - 2020**

Instructors: faculty from Petroleum, Computer Science, and Business & IT

Prerequisite: STAT 216 or STAT 332.

This is a 3-credit course consisting of 2 fifty-minute lectures and 1 three-hour lab per week. The lab section will be taught by instructors from the Petroleum, Computer Science, and Business and Information Technology departments, with 1/3 of the semester focused on each of the different areas: business, engineering, and computing. Each instructor will utilize a different analytics tool in their lab session.

#### Course Overview:

Using an agile project management methodology, students will develop knowledge and skills in data analytics to provide creative and innovative solutions to a variety of business, science, and engineering problems, while gaining proficiency in the use of current data analytics software.

#### Course Outcomes

1. Students will understand the data curation processes.
2. Students will understand the difference between business intelligence (BI) and business analytics (BA) uses and methodology.
3. Students will explore applications of Big Data from the perspective of different disciplines.
4. Students will explore and work with concepts of analytical decision modeling.
5. Students will use a number of different data analytics tools to solve small scale problems from interesting data sets.
6. Students will explain the output of the analyses as they relate to a problem domain.
7. Students will be aware of issues relating to information privacy including consequences of data retention policies, information integrity, and they will understand the concept of information stewardship.
8. Students will understand the purpose of conceptual, logical and data modeling and be able to transform a logical model into a physical database schema.
9. Students will understand the relational model, its significance, and the creation of a relational schema that incorporates entity integrity, and referential integrity constraints.
10. Students will be able to write basic Structured Query Language (SQL) DDL and DML statements.
11. Students will understand the purpose and concepts of transactions.
12. Students will work in interdisciplinary teams to develop a data analysis project that includes a relational database to solve a small scale analytics problem using either provided data sets, or a curated on-line dataset.

# MontanaTech

Curriculum Change Request Form Dated 2 Feb 2017

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

Date January 29, 2019

Dept. Business and Information Technology

College CLSPS

Program: Bachelor's of Science, Business and Information Technology, Health Information Technology

Description of Request/Summary: Reinstate the Bachelor's of Science, Business and Information Technology, Health Information Technology. Approval of eliminating the option by the CRC occurred in Spring 2018, without submittal to the Board of Regents. Note that a future request will update the catalogue and curriculum, to include additional HCI courses and other changes based upon review.

Current Course Program Information: See attached curriculum worksheet from 2018.

~~Never  
gone~~ OK

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

Course #	Name	Credits	Pre-req.

List of supporting documentation attached:

1. Example: syllabus
2. Example: Curriculum worksheet

Assessment Leading to Request

The request is being made due to the program prioritization process, which includes final recommendations regarding removal of the undergraduate HCI degrees and making changes to the BIT/HIT degree.

Anticipated Impacts to "Other" Programs

None at this time

Impact on Library: (Or No consultation is required since courses are not being created at this time.)

Date to take effect: August 26, 2019

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 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 **NO**
- 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):*

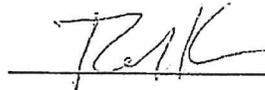
- Re-titling an existing postsecondary educational program
- Terminating an existing postsecondary educational program
- Consolidating existing postsecondary educational programs
- Establishing a new minor where there is a major or an option in a major
- Revising a postsecondary educational program
- 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:

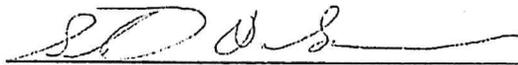
**APPROVALS**

Department Head Approval



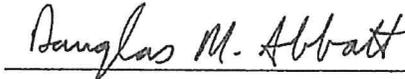
Date 2/1/2019

Dean Approval



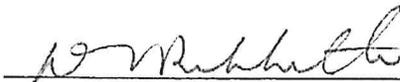
Date 2/4/19

VCAAR Approval (see above)



Date 2/5/19

Chancellor Approval (see above)



Date 2/5/19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval



Date 2-22-19

Faculty Senate Approval

\_\_\_\_\_ Date \_\_\_\_\_

Date 02/18/2019  
Dept. Computer Science  
Program Data Science

College SME  
CRC Representative Jeff Braun

Description of Request: Create a minor in Data Science

Current Course or Program Information: No minor currently exists, however, BS degree exists.

### Proposed Change

Course # Name	Credits	Pre-req.
N/A		
See attached sheet for Data Science Minor curriculum requirements.		

### List of supporting documentation attached:

1. Data Science Minor Application Worksheet
2. Draft Board of Regents Level 1 Proposal
3. Letter of Support, Burt Todd, Petroleum Engineering

### Assessment Leading to Request

In October 2016, Burt Todd of Petroleum Engineering initiated a discussion as a result of their Industry Advisory Board interest in a big data emphasis for Petroleum Engineering graduates. Initial discussions concerned whether the Computational Science Minor would suffice for their needs, but it soon became evident that the focus was very different than what industry, in this case, wanted. Prior to that time, the Data Science Bachelor Degree program had been approved, and was slated to begin the following academic year; fall 2017.

Discussions on developing a Data Science Minor ensued after that. One issue we discovered in defining the minor is that we had a need for an analytics course that was not offered in the Computer Science or Statistics curricula at the time. We reached out to Business and Information Technology and found that there was a course they offered which would meet those needs. The current Data Science Minor proposal is a joint effort between individuals in Computer Science, Statistics, Business and Information Technology, and Petroleum Engineering. Rick Rossi of Statistics, Phil Curtiss and Michele Van Dyne of Computer Science, Rita Spear and Tim Kober of Business and Information Technology, and Sue Schrader and Burt Todd of Petroleum Engineering have all been instrumental in determining the course requirements, sequencing and content for the proposed Data Science Minor.

At present, the proposal still needs approval at the Montana Tech level, first through signatory approval of department entities and administration and then through CRC and Faculty Senate. Once this is complete, the current draft proposal will be finalized and sent to the Board of Regents.

### Anticipated Impacts to "Other" Programs

No negative impacts are anticipated, but it will provide an opportunity for students in other majors to enhance employment potential by including the minor in their studies.

**Impact on Library:** Michele Van Dyne has consulted with Scott Juskiewicz (02/08/19) at the Montana Tech library to ensure needed materials and media are available.

**Date to take effect:** AY 2019/2020 Catalog

# MontanaTech

Curriculum Change Request Form Dated 6 September 2018

## APPROVALS

Department Head Approval

Michele Van Dyne

Digitally signed by Michele Van Dyne  
DN: cn=Michele Van Dyne, o=Montana Tech, ou=Computer Science,  
email=mvan@montanatech.edu, c=US  
Date: 2019.02.22 11:05:19 -0700

Date \_\_\_\_\_

Dean Approval



Date 2-11-19

Graduate Council Approval

Date \_\_\_\_\_

CRC Approval

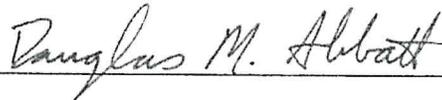


Date 2-22-19

Faculty Senate Approval

Date \_\_\_\_\_

VCAA Approval (see below)



Date 2/11/19

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:

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

Date 01/22/2019  
 Dept. Computer Science College CLSPS/SME  
 Program: Computer Science and Software Engineering

*Put in moratorium*

Description of Request/Summary: ~~Eliminate 7 options and retain them as focus areas.~~ The options are Business Applications, Electronic Control Systems, Engineering Applications, Statistical Applications, Technical Communications, Health Care Informatics and Game Development. The external areas of study will still be available to students as focus areas of study, but will no longer carry the administrative overhead of "options".

Current Course Program Information: Currently both the Computer Science and the Software Engineering degrees offer seven options in areas outside the department. Completing an option is currently mandatory for Software Engineering students, and optional for Computer Science students.

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

Course # Name	Credits	Pre-req.
N/A	N/A	N/A

Under the Academic Programs section of the catalog, the programs will only be listed as:

Computer Science, B.S.  
 Software Engineering, B.S.

On the page listing the degrees themselves, following the format of "focus areas" for Mechanical Engineering, there should be a section titled "Professional Electives", with each of the focus areas listed as a link to our focus area web pages such that updates will only need to be made in one place. (Completing a focus area will still be optional for Computer Science students and mandatory for Software Engineering students.)

List of supporting documentation attached:

1. Current Curriculum Worksheets
2. Proposed Curriculum worksheets

Assessment Leading to Request

Administering the current options for both the Computer Science and the Software Engineering degrees takes unnecessary time and effort for department faculty and the registrar, and the inclusion of each option in the catalog as a separate degree is confusing to potential students and recruiters alike. The intention of the proposed change is to reduce the complexity of offering options. A side effect of this is that the focus area will not appear on the students' transcripts, but students may still choose to list this on, for example, a resume.

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: Academic Year 2019-2020

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 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:

**OCHS 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 **NO**
- 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:

**APPROVALS**

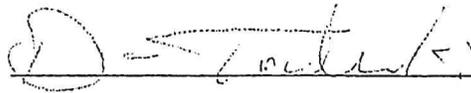
Michele Van Dyne

Digitally signed by Michele Van Dyne  
DN: cn=Michele Van Dyne, o=Montana Tech, ou=Computer  
Science, email=mvandyne@mttech.edu, c=US  
Date: 2019.02.13 09:57:00 -0700

Department Head Approval

\_\_\_\_\_ Date \_\_\_\_\_

Dean Approval



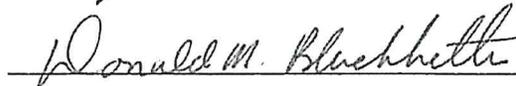
\_\_\_\_\_ Date 2-15-19

VCAAR Approval (see above)



\_\_\_\_\_ Date 2/18/19

Chancellor Approval (see above)



\_\_\_\_\_ Date 2/19/19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval



\_\_\_\_\_ Date 2-22-19

Faculty Senate Approval

\_\_\_\_\_ Date \_\_\_\_\_

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

**Date** 02/06/2019

**Dept.** Health Programs

**College** Highlands College

**Program:** Certified Nurse Assistant Certificate

**Description of Request/Summary:** Termination of the Certified Nurse Assistant Certificate from Highlands College of Montana Technological University.

**Current Course Program Information:**

**The Certified Nurse Assistant Certificate consists of a 14/15 credit program, which included the follow course:**

AMGT 090 Introductory Keyboarding or CAPP 131 Basic MS Office 2 or 3 credits

WRIT 100 Composing Mindfully Writing Fundamentals 3 credits

HLTH 0107 Basic Anatomy and Physiology 2 credits

M 090 Introductory Algebra 4 credits

HLTH 0110 Nursing Fundamentals 3 credits

Total credits 14/15

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

<u>Course #</u>	<u>Name</u>	<u>Certified Nurse Assistant</u>	<u>Credits</u>	<u>14/15</u>	<u>Pre-req.</u>	<u>None</u>
	Highlands College of Montana Technological University no longer offers the Certified Nurse Assistant Certificate, consisting of a 14/15 credit program.					

**List of supporting documentation attached:**

1. Program prioritization report

**Assessment Leading to Request**

Assessment from documentation of Program Prioritization.

**Anticipated Impacts to "Other" Programs**

None

**Impact on Library:** No impact on the Library

**Date to take effect:** 05/05/2019

**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)

# MontanaTech

Curriculum Change Request Form Dated 8 May 2017

- 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 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:

OCE 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:

## APPROVALS

Department Head Approval



Date 2/7/19

Dean Approval



Date 2/7/19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval



Date 2-22-19

Faculty Senate Approval

\_\_\_\_\_ Date \_\_\_\_\_

VCAA Approval (see above)

\_\_\_\_\_ Date \_\_\_\_\_

Chancellor Approval (see above)

\_\_\_\_\_ Date \_\_\_\_\_

Program: Nursing Assistant (CNA)

Credential Awarded:

CTS Certified Nursing Assistant

*FY19 FTE = 1*

#### *Guideposts and Metrics*

- **Guidepost 2:** Does not matriculate to an S&E 4-year program  
Does not draw student from out-of-state  
Not designated as a O\*NET STEM program
- **Guidepost 4:** Program not aligned with north campus degree
- **Enrollment:** This is difficult to measure because most students enroll either into the Medical Assistant program or under the AS program, depending upon their career goal.

#### *Overall Observations*

The CNA program struggles for many reasons. First, as a program it is not Financial Aid eligible, so our workarounds obscure the student intent. Second, there are many competitors on the market who deliver the program on-demand and in a shorter time period, which meets industry demand. Students employed in nursing homes and other medical settings can take this program free through their employer. Third, the last iteration of the TAACCCT grant helped develop apprenticeship models for the CNA program, so Montana Department of Labor and Industry and the Area Health Education Centers administer these programs.

#### *Recommendation*

- Recommendation is to eliminate the CNA 15-credit program and work in partnership with area High Schools and Adult Basic Education programs to help students earn the credential
- Utilize faculty to teach and coordinate non-credit/credit health classes
- Move forward on implementation of LPN program to meet the needs of the community and to recapture BSN students not accepted/failed BSN program
- Utilize faculty member as a healthcare industry liaison building partnerships with organizations and institutions that deliver healthcare throughout the region
- Revise/rename nursing fundamentals course to meet the needs of nursing assistant training
- Develop stackable credentials for working adults wanting to go into the healthcare field

#### *Change from FY19*

No change in faculty due to CNA faculty will teach non-credit/credit health classes

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

Date 01/17/2019

Dept. Statistics

College CLSPS

Program: Statistics

Description of Request/Summary: Enter the Statistics major into moratorium.

Current Course Program Information: Can be found in the 18/19 academic catalog.

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

Course # Name	Credits	Pre-req.
Place Statistics major into moratorium.		

**Assessment Leading to Request**

Rationale for this moratorium can be found here: <https://www.mtech.edu/academics/provost/Program-Prioritization-Document-12-14-2018-final-acc.pdf> (page 31)

**Anticipated Impacts to "Other" Programs**

Process for creating a Statistics option within the Mathematics major has begun.

**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:** 05/16/2019

**LEVEL of Request**

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

*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:

APPROVALS

Department Head Approval R.J. Rossi \_\_\_\_\_ Date 01/17/2019

Dean Approval  \_\_\_\_\_ Date 2/15/19

Provost / VCAA Approval (see above) Douglas M. Albatt \_\_\_\_\_ Date 2/15/19

Chancellor Approval (see above)  \_\_\_\_\_ Date 2/16/19

CRC Approval  \_\_\_\_\_ Date 2-22-19

Faculty Senate Approval \_\_\_\_\_ Date \_\_\_\_\_

**Montana University System**  
PROGRAM TERMINATION/MORATORIUM FORM

Please complete the following questionnaire prior to submission of a program for termination or placement into moratorium. Please add additional comments beneath each question where applicable.

Program Title: **Statistics**

Program is being  Placed into moratorium  Terminated

1. Are there currently students enrolled in the program? (If yes, please answer questions a - c below.) Y:  N:

a.) Have all students currently enrolled in the program been met with and informed of the impending termination/moratorium? Y:  N:

b.) What is the expected graduation date of all students from the program? **2021**

c.) Have course offerings been planned to allow for students in the program to complete the degree in a reasonable fashion? Y:  N:

2. Will any faculty layoffs or changes in working conditions occur because of the termination/moratorium? (If yes, please answer questions a - b below.) Y:  N:

a.) Have the faculty affected by the program termination/moratorium been notified? Y:  N:

b.) Please describe any layoffs that will occur including the date expected? n/a

*n/a Amt 2/15/19*

**Montana University System**  
PROGRAM TERMINATION/MORATORIUM FORM

3. The following parties, where applicable, have been notified of the impending program termination/moratorium. (Please mark X for completed, NA for not applicable):

a.) Internal Curriculum Committees                          X    

b.) Faculty Senate        X    

c.) Program Public Advisory Committee                        n/a  

d.) Articulation Partners                                        n/a  

4. Has there been any negative feedback received from students, faculty, or other constituents regarding the impending termination/moratorium? (If yes, please explain below.)      Y:   X   N:       

During the open forums held on campus, one post baccalaureate student asked the Program Prioritization Committee to retain the Statistics Program.



December 4, 2018

To the Program Prioritization Committee:

We are writing this letter in response to Chancellor Blackketter's Initial Recommendations concerning the Statistics and Data Science programs.

First, we would like to point out that Chancellor Blackketter's recommendation to eliminate the Statistics program does not reduce the number of faculty nor the course offerings in Statistics and only saves the \$5,000 department head stipend. All of the courses in the Statistics program are required by at least one other program. In particular, all of the 300-400 level Statistics courses are required in the Data Science major.

Eliminating the Statistics program will deprive students of an educational opportunity that has outstanding and high paying job prospects. Additionally, the existing Minor in Statistics is not addressed in the Initial Recommendations and represents a valuable option for many Montana Tech students.

Furthermore, the Statistics program is a high-quality program that has produced:

- Two Goldwater Scholars,
- Two students who earned Ph.D.'s at UC Davis - Biostatistics and Statistics,
- Two students currently working on Ph.D.'s in Statistics - Montana State University and Washington State University,
- 25 – 30 of our graduates have completed master's degrees in Statistics at institutions including Purdue, Texas A&M, Oregon State University (3), Florida, UC Davis (3), MSU (many) and University of Idaho,
- Students working at International Atomic Energy Agency, Newmont Mining, NIH, NorthWestern Energy, Seagate, MT Department of Labor and Industry, MT Department of Public Health and Human Services, Blue Cross Blue Shield, Pappas Delaney, LLC, ARCO, and many others, and
- 100% acceptance into graduate programs.

The Statistics faculty would ask the Program Prioritization Committee to consider some additional points before eliminating the Statistics program and making the stand-alone Data Science program an option in CS/SE. Factors regarding the need for the Statistics program include:

- The Statistics degree is a STEM degree that aligns well with the Montana Tech's Mission Statement.
- The majority of math graduates have been Statistics majors.

**MontanaTech**

1300 West Park Street | Butte, Montana 59701 | 800-445-TECH | [www.mtech.edu](http://www.mtech.edu)

- Contrary to the “Montana Technological University Alignment Plan - Version 1.0 Initial Recommendations” mention of one Statistics major, we have at least three students currently majoring in Statistics.
- The job as a statistician has been rated one of the top 10 jobs in each of the last 10 years, often ranking in the top five. See US News “The 25 Best Jobs of 2018”:  
<https://money.usnews.com/money/careers/slideshows/the-25-best-jobs?slide=21>
- Enrollment numbers, as presented, are never accurate for Statistics and Data Science because Statistics/Data Science is a change of major or double-major for many students. Students who change majors often do not declare their new major in a timely fashion and often not until they are close to graduation. This has been a point of contention for over 20 years.
- Statistics is a highly employable discipline. National statistics show that Statistics graduates have a lower unemployment rate than applied math, electrical engineering, materials science, and actuarial science. See, for example:  
[www.theladders.com/career-advice/the-10-toughest-majors-for-finding-jobs-after-college-for-2018](http://www.theladders.com/career-advice/the-10-toughest-majors-for-finding-jobs-after-college-for-2018)
- While Statistics enrollment has dipped somewhat over the last few years, Statisticians continue to be in demand in a data driven world.
- Little if any money has been spent on recruiting students for the Statistics program. With a little help, the enrollment in the Statistics program could be increased to a viable number.
- The American Mathematical Society has been recommending that more statistics be part of the math curriculum for the past 30 years, as there are many more jobs in statistics than in applied math.
- Statistics is the most employable field in the Mathematical Sciences.
- Jobs in applied math for graduates with a bachelor’s degree are almost all data analyst (i.e., statistics) jobs.
- Several Mathematical Sciences Math option graduates have opted to retrain as statisticians due to the limited job opportunities in math.

As previously mentioned, there are virtually no cost savings to be realized by eliminating the Statistics Program and splitting the existing faculty between two departments. Other factors which should be considered include:

- Splitting the Statistics faculty among two departments is problematic and will create issues amongst the Statistics faculty regarding salary, recruitment, evaluation, etc.
- Members of an existing group of faculty with the same training and expertise will be treated differently.
- Questions will immediately arise as to whether the incoming Statistics faculty in CS/SE will be treated and paid differently than the current CS/SE faculty. The same questions apply to the Statistics faculty member assigned to Mathematical Sciences.

The new Data Science degree relies heavily on the Statistics program and will be greatly influenced by the proposed shakeup:

- Data Science is a promising new degree with growing enrollment and according to Montana Tech's recruiters is a degree of high interest among prospective students.
- Data Science deserves a chance to succeed as a stand-alone program. The degree is in its second year of existence and the enrollment and interest in Data Science is growing. If Data Science becomes a mere option in CS/SE, it will be perceived as less desirable relative to other Data Science programs, such as those at UM and MSU.
- Data Science is an inter-disciplinary program whose core is Statistics, not Computer Science.
- The job as a Data Scientist is the top rated job according to Business Insider. See <https://www.businessinsider.com/best-jobs-in-america-2018-1#1-data-scientist-50>

Elimination of the Statistics program and splitting its faculty between two departments would produce no real cost savings or other benefits. Similarly, downgrading the Data Science program to a mere option within the Computer Science program would cripple an emerging program without producing corresponding savings or long-term benefits. Alternative reorganization options should be considered.

### **Statistics Faculty Recommendation**

The Statistics faculty has met and unanimously supports the following proposed changes to "Montana Technological University Alignment Plan - Version 1.0 Initial Recommendations":

1. Keep the current Statistics group together and merge the Statistics faculty into the Department of Mathematical Sciences. This was Statistics' original home and would reflect a common system at other institutions. MSU and UM, for instance, also have Statistics housed within the Department of Mathematical Sciences.
2. Maintain the Statistics degree, preferably as a stand-alone degree or at least as an option within the Department of Mathematical Sciences.
3. Keep the Data Science degree as a stand-alone degree co-administered by the Head of Computer Science with a designated co-director from the Statistics faculty.

Rick Rossi

Suzan Gazioğlu

Chip Todd

Date 02/05/19

Dept. Mathematical Sciences

Program Statistics

College CLSPS

CRC Representative Atish Mitra

**Description of Request:** Proposing a Statistics option in Mathematical Sciences. PPC recommended eliminating the standalone Statistics program, however, all of the courses in the Statistics degree are required to be taught for the Data Science degree. The Statistics faculty will now reside in Mathematical Sciences and continue teach all of the Statistics courses required in the proposed Statistics option.

Current Course or Program Information: XXXXXXXX

### Proposed Change

Course # Name	Credits	Pre-req.
See attached curriculum worksheet.		
This should include what will appear in the catalog, exactly. New course require course objectives listed in this area.		

### List of supporting documentation attached:

1. Curriculum worksheet attached

### Assessment Leading to Request

There is a tremendous demand in industry and government for statisticians, data analysts, and data scientists. Statistics is one of the most employable majors according to [www.theladders.com/career-advice/the-10-toughest-majors-for-finding-jobs-after-college-for-2018](http://www.theladders.com/career-advice/the-10-toughest-majors-for-finding-jobs-after-college-for-2018).

The Statistics program is a high-quality program that in the past produced:

- Two Goldwater Scholars,
- Two students who earned Ph.D.'s at UC Davis - Biostatistics and Statistics,
- Two students currently working on Ph.D.'s in Statistics - Montana State University and Washington State University,
- 25 – 30 of our graduates have completed master's degrees in Statistics at institutions including Purdue, Texas A&M, Oregon State University (3), Florida, UC Davis (3), MSU (many) and University of Idaho,
- Students working at International Atomic Energy Agency, Newmont Mining, NIH, NorthWestern Energy, Seagate, MT Department of Labor and Industry, MT Department of Public Health and Human Services, Blue Cross Blue Shield, Pappas Delaney, LLC, ARCO, and many others, and
- 100% acceptance into graduate programs.

There is no additional cost to the university in offering the Statistics option since all required courses already exist and will continue to be taught to support the Data Science program.

### Anticipated Impacts to "Other" Programs

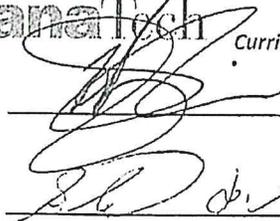
No anticipated impacts to other programs other than possible increase in the number of Mathematical Sciences majors.

**Impact on Library:** No consultation is required since changes are only in the department housing of the Statistics degree.

**Date to take effect:** 08/15/2020

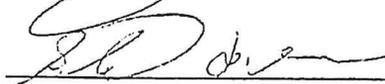
### APPROVALS

Department Head Approval



Date 2/11/19

Dean Approval



Date 2/12/19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval

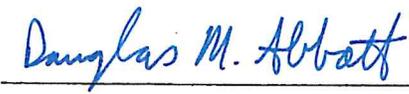


Date 2-22-19

Faculty Senate Approval

\_\_\_\_\_ Date \_\_\_\_\_

VCAA Approval (see below)



Date 3/1/19

Chancellor Approval (see below)



Date 3/1/19

### 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
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- Re-titling an academic, administrative, or research unit
- Other:

SDR

SDR

**Option in Statistics**

Name: \_\_\_\_\_

2020 - 2021

Fall Semester				Spring Semester					
			Credit	Sem			Credits		
<b>FRESHMAN YEAR</b>									
M	171	Calculus I	3	_____	M	172	Calculus II	3	
STAT	216	Introduction to Statistics	3	_____	*		Science Elective	3	
M	194	New Major Seminar in Mathematical Sciences	1	_____			General Elective	3	
WRIT	101	College Writing I	3	_____	**		General Elective	3	
COMX	111	Intro to Public Speaking OR	3	_____	**		General Elective	3	
COMX	211	Adv. Public Speaking	3	_____	**			3	
			<i>Total Credits</i>	13				<i>Total Credits</i>	15
<b>SOPHOMORE YEAR</b>									
M	242	Methods of Proof	3	_____	M	274	Intro. To Diff. Equations	3	
M	273	Multivariable Calculus	4	_____	M	333	Matrices & Linear Algebra	3	
STAT	332	Statistics for Scientists & Engineers	3	_____	M	323	Methods of Proof II	3	
*		Science Elective	3	_____	STAT	435	Statistical Computing & EDA	3	
**		General Elective	3	_____	STAT	432	Regression & Model Building	3	
			<i>Total Credits</i>	16				<i>Total Credits</i>	15
<b>JUNIOR YEAR</b>									
STAT	421	Probability Theory	3	_____	STAT	422	Mathematical Statistics	3	
M	435W	Advanced Calculus I	3	_____	STAT	454	Stat Learning & Data Sci II	3	
STAT	453	Stat Learning & Data Sci I	3	_____	**		General Elective	3	
**		General Elective	3	_____	**		General Elective	3	
**		General Elective	3	_____	**		General Elective	3	
			<i>Total Credits</i>	15				<i>Total Credits</i>	15
<b>SENIOR YEAR</b>									
STAT	441	Experimental Design	3	_____	STAT	456	Bayesian Statistical Inference	3	
M	3xx/4x	Mathematics Elective	3	_____	**		General Elective	3	
**		General Elective	3	_____	**		General Elective	3	
**		General Elective	3	_____	**		General Elective	3	
**		General Elective	1	_____	**		General Elective	3	
			<i>Total Credits</i>	16				<i>Total Credits</i>	15

B.S. degree in Statistics = 120

\* Science Electives must include at least one semester of laboratory science, either (1) BIOB 101 with lab BIOB 102, BIOB 160 with lab BIOB 161, BIOC 235, or BIOH 201/202; (2) CHMY 141 with lab CHMY 142; (3) GEO 101 with lab GEOE 104 or GEO 209; or (4) PHSX 234 and PHSX 235 with lab PHSX 236.

\*\* Electives must be chosen so that the Gen. Ed. Requirements in the Communication Core, Humanities Core, Physical and Life Sciences Core, and Social Sciences Cores are met.

The STAT 421(F), 422(S), 453(F), 454(S), and 456(S) are offered on alternate year basis.

Date 01/14/19

Dept. Geophysical Engineering

Program Geophysical Engineering

College SME

CRC Representative Marv Speece

Description of Request: Add a course GEOP 101: Introduction to Geophysics.

**Current Course or Program Information:**

We taught this course many times in the past, but we dropped it recently from the curriculum (and catalog) to make room for freshman engineering. We are adding it back to help retain students between the freshman and sophomore years.

**Proposed Change**

<u>Course # Name</u>	<u>Credits</u>	<u>Pre-req.</u>
<u>Add</u> GEOP 101, Introduction to Geophysics	1	M 151
<b>Catalog Description:</b> GEOP 101 Introduction to Geophysics <i>1 Cr.. (Hrs.:1 Lec.)</i> Provides a basic description of the geophysical processes shaping the earth as well as an introduction to the uses of geophysical techniques in mining, petroleum, and groundwater exploration and geotechnical applications in engineering site evaluation.		
<b>Course Outcomes:</b> Students will be able to: <ul style="list-style-type: none"><li>Identify the major areas of geophysics (seismology, electrical methods, electromagnetic methods, gravity, magnetics)</li><li>Describe how geophysical measurements from each of the areas can be used to solve subsurface problems</li></ul>		

**List of supporting documentation attached:**

Syllabus

**Assessment Leading to Request**

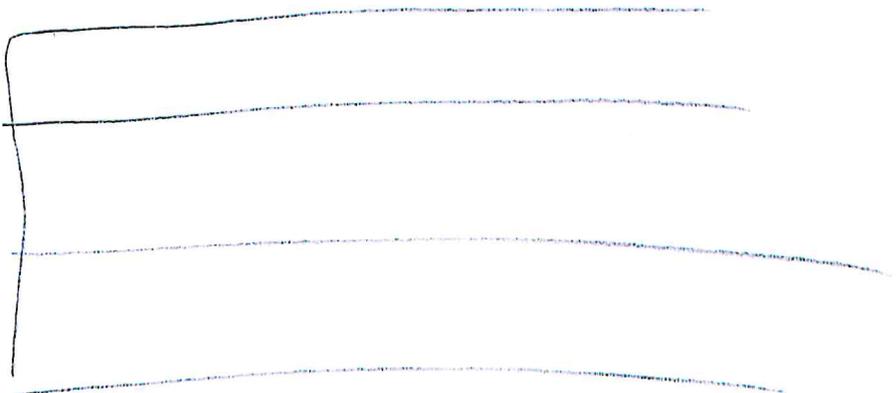
Program prioritization; this course is being added to help retain students between the freshman and sophomore years.

**Anticipated Impacts to "Other" Programs**

None

**Impact on Library:** No consultation is required because this is a renewal of a course that we recently removed from the course catalog. We taught it as recently as 2014.

**Date to take effect:** Spring semester, 2019.

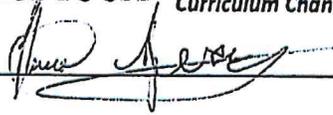


# MontanaTech

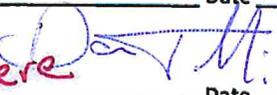
Curriculum Change Request Form Dated 6 September 2018

## APPROVALS

Department Head Approval

 Date 1-24-19

Dean Approval

DAN oked & was there  Date 3-1-19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval

 Date 2-22-19

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:

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- Re-titling an academic, administrative, or research unit
- Other:

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

Date January 29, 2019

Dept. Health Care Informatics (HCI)

College CLSPS

Program: Bachelor of Science Health Care Informatics, Associate of Applied Science Health Care Informatics

Description of Request/Summary: Place both Bachelor's and Associate's in moratorium per Program Prioritization. Note that a future request will update and enhance the Bachelor's of Science, Business and Information Technology, Health Information Technology. As such, HCI courses will still be listed in the catalogue as they will pertain to the BIT/HIT degree (as well as the HIT certificate programs).

Current Course Program Information: N/A

~~1003010101~~

Need Form  
Verify more form

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

Course #	Name	Credits	Pre-req.

Signed  
atd 3/12/19

List of supporting documentation attached:

1. Example: syllabus
2. Example: Curriculum worksheet

✓ cannot find it

Assessment Leading to Request

The request is being made due to the program prioritization process, which includes final recommendations regarding the undergraduate HCI degrees.

Anticipated Impacts to "Other" Programs

None at this time

Impact on Library: (Or No consultation is required since courses are not being created)

Date to take effect: August 26, 2019

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 of 29 credits or less
- Other:

# MontanaTech

Curriculum Change Request Form Dated 2 Feb 2017

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- Other:

**APPROVALS**

Department Head Approval

*J. Kevin Farley*

Date Jan 29, 2019

Dean Approval

*SD*

Date 2/5/2019

VCAAR Approval (see above)

*Douglas M. Abbatt*

Date 2/5/19

Chancellor Approval (see above)

*DM Blum*

Date 2/5/19

Graduate Council Approval

\_\_\_\_\_ Date \_\_\_\_\_

CRC Approval

*A. Hark*

Date 2-22-19

Faculty Senate Approval

\_\_\_\_\_ Date \_\_\_\_\_