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Missouri State.

Curricular Action Workflow

designed by Computer Services

New Course Proposal Form

Submitted on 02/22/2018 by William Bray (WBray@MissouriState.edu).

***All fields require input**

(•) New COURSE

( ) New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: MTH

Course Number: (Check Availability) 137

Course Title: Precalculus 2

Will this course become part of a program? ( ) No ( ) Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? ( ) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (•) No ( ) Yes

Prerequisite/Co-requisite or enter 'None':

MTH 136 or suitable score on the Mathematics placement exam.

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability, UG/GR parallel course, etc.)

This course is part two of a two course sequence with emphasis on the analytic, graphical, and numerical representations of functions. The focus of the course is on the library of trigonometric functions along with higher algebraic and geometric reasoning in preparation for the study of Calculus (MTH 261). Grade of C or better required to enroll in MTH 261. Credit will not be given for both MTH 137 and 138 or MTH 137 and 181. Cannot count toward the mathematics major or minor. Cannot be taken Pass/Fail.

Credit Hours:	3	Lecture Contact Hours:	3	Lab Contact Hours:	0

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

(1)

Periodicity. Check all that apply.

☑	Fall	☐	Fall (even-numbered years only)	☐	Fall (odd-numbered years only)
☑	Spring	☐	Spring (even-numbered years only)	☐	Spring (odd-numbered years only)
☑	Summer	☐	On Demand only		

Complete Catalog Description:
MTH 137 Precalculus 2
Prerequisite: MTH 136 or suitable score on the Mathematics placement exam.
This course is part two of a two course sequence with emphasis on the analytic, graphical, and numerical representations of functions. The focus of the course is on the library of trigonometric functions along with higher algebraic and geometric reasoning in preparation for the study of Calculus (MTH 261). Grade of C or better required to enroll in MTH 261. Credit will not be given for both MTH 137 and 138 or MTH 137 and 181. Cannot count toward the mathematics major or minor. Cannot be taken Pass/Fail.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 0
Typically offered: Fall, Spring, Summer

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

Attached

Purpose of Course

This is the second course in a two course sequence (along with MTH 136) and is designed to provide students whose program of study requires Calculus (MTH 261) with a mastery of necessary trigonometric functions and reasoning.

Relationship to Other Departments

Needed in all STEM fields and will replace the role of MTH 181 Trigonometry for students in those fields.

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

New Course Resource Information

Anticipated Average Enrollment per section:	30	Maximum Enrollment Limit per section:	40
Anticipated Average Enrollment per semester:	150	Maximum Enrollment Limit per semester:	200
Anticipated Average Enrollment per year:	300	Maximum Enrollment Limit per year:	440
Faculty Load Assignment (equated hours):	3.0		

Is another course being deleted? ◉ No ○ Yes

What will this course require in the way of:

Additional library Holdings

None

Additional computer resources

None

1

Additional or remodeled facilities

None

Additional equipment or supplies

None

Additional travel funds

None

Additional faculty: general vs specialized

None

Additional faculty: regular vs per-course

None

Other additional expenses

None

If additional faculty are not required, how will faculty be made available to teach this course?

Faculty who currently teach MTH 181 will be used to teach MTH 137. MTH 181 will no longer be offered after Fall 2018.

List names of current faculty qualified and available to teach this course

Blanton, Bunn, Shand-Hawkins, Stafford, Belshoff, Guo, Hu, Kemp, Kilmer, Rebaza, Reid, Rogers, Senger, Shah, Stanojevic, Sun, Wickham, Wright

What is the anticipated source of students for this course?

Any fields/majors requiring student pursue the study of Calculus (MTH 261).

If from within the department, will students be taking this course in addition to or in place of other courses?

All mathematics majors are required to take MTH 261--MTH 137 along with MTH 136 (new course) will provide one pathway to MTH 261 for students not prepared to begin their studies in MTH 261.

If from outside the department, which courses in other departments would most likely be affected?)

Any departments that currently require their students take MTH 261: Biology, Chemistry, Geology, Physics, Engineering.

Other comments:

To CGEIP. This course will replace MTH 181 in the mathematics curriculum. As MTH 181 is a GenEd course in Quantitative Literacy not requiring assessment for General Education, the new course MTH 137 should also not require assessment for General Education.

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 09/27/2017

Current Status:

College Council Review

Proposal Progress:

02/22/2018 - Submitted by Department Head (William Bray)

Review Comments:

02/22/2018 - Department Head Review - William Bray - Ready to go for the second time!

[redacted]

MAKE YOUR MENT.

MTH 137 Precalculus 2
(Generic) Syllabus & Policy Statement

Instructor Name, Contact Information & Office Hours (mandatory on all syllabi and policy statements)

Prerequisites: Grade of C or better in MTH 136, or suitable score on the mathematics placement exam.

Description: This course is part two of a two course sequence with emphasis on the analytic, graphical, and numerical representations of functions. The focus of the course is on the library of trigonometric functions along with higher algebraic and geometric reasoning in preparation for the study of Calculus (MTH 261). Grade of C or better required to enroll in MTH 261. Credit will not be given for both MTH 137 and 138 or MTH 137 and 181. Cannot count toward the mathematics major or minor. Cannot be taken Pass/Fail.

Philosophy of the Course: The course is designed to provide students whose program of study requires Calculus (MTH 261) with a mastery of necessary algebraic functions and reasoning.

Purpose of the Course: Students can take this course to meet the Focus on Quantitative Literacy portion of the Foundations requirement in General Education. This course will meet Goal 5 of the MSU General Education Learning Goals:

General Goal (5): Students will be able to reason and solve quantitative problems from a wide array of contexts and everyday life situations; understand and create logical arguments supported by quantitative evidence; and clearly communicate those arguments in a variety of formats (e.g., words, tables, and mathematical equations) as appropriate.

This is achieved through the following student learning outcomes (SLO):
SLO 5.1. Interpret and communicate information presented in mathematical forms (e.g., equations, functions, graphs, diagrams, tables, or words).
SLO 5.2. Convert relevant information into various mathematical forms (e.g., equations, functions, graphs, diagrams, tables, or words).
SLO 5.3. Calculate numerically and symbolically to solve a problem.
SLO 5.4. Analyze data quantitatively as the basis for competent, valid, and reliable inferences in order to draw reasonable and appropriate conclusions.
SLO 5.5. Use appropriate mathematical tools to explicitly describe assumptions, mathematical relationships, and conclusions.
SLO 5.6. Express evidence in support of an argument by employing an appropriate form of presentation (e.g., equations, functions, graphs, diagrams, tables, or words).

Required Textbook: Precalculus: Functions and Graphs, by Swokowski and Cole, 12th edition.

Additional Course Materials: Along with the required textbook, the instructor and students will use written and on - line sources to explore particular topics in more depth.

Content Learning Outcomes. The following provide the broad content learning outcomes for students in this course.

I. Trigonometric Functions. (SLO 5.1, 5.2, 5.5, 5.6)

1. Demonstrate and understanding of the definitions of the basic trigonometry functions and their relation to geometry through right triangles and the unit circle.
2. Identify important properties of the graphs of trigonometric functions and their behavior under transformations.
3. Define and analyze the inverse trigonometric functions.

II. Algebraic and Geometric Reasoning (SLO 5.1, 5.2, 5.3, 5.5, 5.6)

1. Develop and use trigonometric identities.
2. Solve equations involving trigonometric functions.
3. Understand and apply the Law of Sines and Law of Cosines.
4. Understand and apply the trigonometric functions in the study of vectors and polar coordinates.

Assessment of Learning Outcomes

Student success of the specific learning outcomes will be assessed through a variety of means. The assessment tools include, but are not limited to, homework (written and/or online), quizzes (written and/or online), tests (written and/or online), and a common (across all sections of the class) written final exam.

The overall course grade will be weighted as follows: 60% in-class exams (at least three); 25% Final exam; 15% other (homework, quizzes, etc., at the discretion of the instructor). The section instructor will assign final course letter grades based on the overall weighted grade as follows: 90-100% A; 80-89% B; 70-79% C; 60-69% D; below 60% F.

Attendance. Due to the nature of this course, attendance to each class is critical. Students should make every effort to be in attendance at each session. In the event that you must miss class,, you should contact the instructor for any items that were distributed during class. You should also contact a classmate to get any missed notes. In the event that the absence occurred on the day of an exam, you must contact the instructor beforehand to arrange a makeup.

Other required policies as per the Provost's office will be put into all syllabi and policy statements including: Academic Integrity, Dropping the Class, Statement of Nondiscrimination, Statement on Disability Accommodation, Cell Phone Use Policy, and Emergency Response Statement.

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Missouri State.

Curricular Action Workflow

designed by Computer Services

Change Course Proposal Form

Submitted on 02/09/2018 by S Mathis (Aliciamathis@missouristate.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

BIO197 Selected Topics in Biology

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Current online catalog description:

BIO 197 Selected Topics in Biology

Prerequisite: permission of instructor. Course devoted to a biologic topic of current interest. Provided the topics are different, the course may be repeated to a total of 4 hours. Credit for this course cannot be applied to the minimum requirements of a major or minor in biology, or the general education (Focus on Life Sciences) requirement.

Supplemental course fee (variable by section). 1-4 D

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

BIO 197 Selected Topics in Biology

Prerequisite: permission of instructor. Course devoted to a biologic topic of current interest. Provided the topics are different, the course may be repeated to a total of 4 hours. ~~Credit for this course cannot be applied to the minimum requirements of a major or minor in biology, or the general education (Focus on Life Sciences) requirement.~~ Supplemental course fee (variable by section). 1-4 D

What is changing? Check all boxes that apply.

☐	Course Code	☐	Course Number (Check Availability)	☐	Title	☐	Prerequisite
☐	Credit Hours/Contact Hours	☐	Periodicity	☑	Description		

2

Reason for proposed change

In the past, we used this course almost solely for students who transferred a lecture course for nonmajors biology without the lab. Students would take the lab as BIO 197, and then I would substitute their transferred lecture course + BIO 197 for BIO 102 (the nonmajors course with combined lecture and lab). We have since split BIO 102 into separate lecture (BIO 101) and lab (BIO 111) courses, so this use for BIO 197 is no longer needed.

Recently, we have been using BIO 197 for special topic purposes that should be allowed to count toward the major or minor, and we have had to make exceptions to override the restriction that the course cannot count toward the major or minor. The above change is consistent with our current usage of the course.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

How did you determine the need for this change? Check all boxes that apply or specify other.

☐	Routine or annual review/assessment of curriculum	☑	Faculty Input	☐	Student Input
☐	Accreditation/certification compliance	☑	Review of catalog information		
☐	Other (be specific):				
☐	Check if this is a non-substantive change.				

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 02/09/2018

Current Status:

College Council Review

Proposal Progress:

02/15/2018 - Submitted by Department Head (S Mathis)

Review Comments:

02/15/2018 - Department Head Review - S Mathis - Note: BIO 197 is used for special topic purposes that are only suitable for LOWER-division credit. We have another special topics course that is used for UPPER-division credit.

[redacted]

MAKE YOUR MENT.

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Missouri State.

Curricular Action Workflow

Assigned by Computer Services

Change Course Proposal Form

Submitted on 02/07/2018 by Georgianna Saunders (Gigisaunders@missouristate.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

BIO485 Marine Conservation

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Current online catalog description:

BIO 485 Marine Conservation

Recommended Prerequisite: BIO 101 and 111, or BIO 122. An overview of current issues related to the conservation and management of marine organisms, with emphasis on marine species and habitats exploited or endangered by human actions. May be taught concurrently with BIO 685. Cannot receive credit for both BIO 485 and 685. Public Affairs Capstone Experience course. 1-3 F,Su

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

BIO 485 Marine Conservation

Recommended Prerequisite: ~~BIO 101 and 111, or~~ BIO 122 **and BIO 369 or permission**. An overview of current issues related to the conservation and management of marine organisms, with emphasis on marine species and habitats exploited or endangered by human actions. May be taught concurrently with BIO 685. Cannot receive credit for both BIO 485 and 685. Public Affairs Capstone Experience course. ~~1~~-3 F,Su

What is changing? Check all boxes that apply.

☐	Course Code	☐	Course Number (Check Availability)	☐	Title	☑	Prerequisite
☐	Credit Hours/Contact Hours	☐	Periodicity	☐	Description		

Reason for proposed change

Students need more in depth knowledge of ecology prior to enrolling in this course. The course is a 3 credit course, not a variable credit course.

3

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

How did you determine the need for this change? Check all boxes that apply or specify other.

☐	Routine or annual review/assessment of curriculum	☐	Faculty Input	☐	Student Input
☐	Accreditation/certification compliance	☑	Review of catalog information		
☐	Other (be specific):				
☑	Check if this is a non-substantive change.				

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 02/02/2018

Current Status:

College Council Review

Proposal Progress:

02/15/2018 - Submitted by Department Head (S Mathis)

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR MENT.

Missouri State.

Curricular Action Workflow

4

designed by Computer Services

Change Program Proposal Form

Submitted on 02/21/2018 by Matthew Siebert (MSiebert@MissouriState.edu).

Department:

Chemistry

Type of Program

Choose One:

◉ Non-Comprehensive Undergraduate Major	○ Option	○ Certification
○ Comprehensive Undergraduate Major	○ Minor	○ Academic Rules
○ Graduate Program	○ Certificate	○ Other

Does this program include any new courses?

○ No ○ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Chemistry-BS-Minor Required

Current Catalog Description: (Either cut and paste present description from online catalog **OR** provide as an attachment below)

Chemistry (Non-Comprehensive)
Bachelor of Science
A) General Education Program and Requirements
B) Major Requirements
1) CHM 160(4), 161(1), 170(3), 171(1), 302(5), 342(5), 343(5), 375(3), 398(1)*; CHM 505(4) or 506(3) and CHM 507(3) and 508(2); 492(0), 498(1)*, 502(4); and one hour from CHM 397* or 399*,**
2) Chemistry electives from one of the following categories:
a) For a basic chemistry program without a specific area of emphasis, at least eight hours from CHM 352(3), 376(2), 399*,** or 499(1-3)*, 460(3) or 461(3), 509(2)
b) For students with a strong interest in environmental chemistry: CHM 460(3), 461(3), 462(2)
c) For students with a strong interest in biochemistry or pre-medicine: CHM 452(3), 453(2), 552(3), 553(2)
d) For students with a strong interest in education: CHM 352(3), 435(1), 460(3), and 462(2). Students interested in pursuing certification for high school science teaching should declare a Foundations of Interdisciplinary Science minor.
e) For a specific area of interest not included in categories a, b, or c: at least nine hours of chemistry courses numbered greater than 300 selected in consultation with the student's academic advisor and approved by the department head.
3) Public Affairs Capstone Experience will be fulfilled by completion of CHM 398 and 498(2); and CHM 397 or 399 or 499(1)
4) Related science and mathematics requirements:
a) MTH 261*** and 280(10) or MTH 261*** and 288(8) or MTH 287 and 288(6)
b) PHY 123*** and 124(8) or PHY 203*** and 204(10)
*Will also count toward the Public Affairs Capstone Experience requirement
**If using CHM399 to fulfill B.1. and B.2.a.: Any hours of CHM399 used to fulfill B.2.a. are in addition to B.1.
***Will also count toward General Education requirements
C) Minor Required (or second major)
D) General Baccalaureate Degree Requirements

4

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] **OR** provide as an attachment below)

Chemistry (Non-Comprehensive)
Bachelor of Science
A) General Education Program and Requirements
B) Major Requirements
1) CHM 160(4), 161(1), 170(3), 171(1), 302(5), 342(5), 343(5), 375(3), 398(1)*; CHM 505(4) or 506(3) and CHM 507(3) and 508(2); 492(0), 498(1)*, 502(4); and one hour from CHM 397* or 399*,**
2) Chemistry electives from one of the following categories:
a) For a basic chemistry program without a specific area of emphasis, at least eight hours from CHM 352(3), 376(2), 399*,** or 499(1-3)*, 460(3) or 461(3), 509(2)
b) For students with a strong interest in environmental chemistry: CHM 460(3), 461(3), 462(2)
c) For students with a strong interest in biochemistry or ~~pre-medicine~~**health careers**: CHM 452(3), 453(2), 552(3), 553(2)
d) For students with a strong interest in education: CHM 352(3), 435(1), 460(3), and 462(2). Students interested in pursuing certification for high school science teaching should declare a Foundations of Interdisciplinary Science minor.
e) For a specific area of interest not included in categories a, b, or c: at least nine hours of chemistry courses numbered greater than 300 selected in consultation with the student's academic advisor and approved by the department head.
3) Public Affairs Capstone Experience will be fulfilled by completion of CHM 398 and 498(2); and CHM 397 or 399 or 499(1)
4) Related science and mathematics requirements:
a) MTH 261*** and 280(10) or MTH 261*** and 288(8) or MTH 287 and 288(6)
b) PHY 123*** and 124(8) or PHY 203*** and 204(10)
*Will also count toward the Public Affairs Capstone Experience requirement
**If using CHM399 to fulfill B.1. and B.2.a.: Any hours of CHM399 used to fulfill B.2.a. are in addition to B.1.
***Will also count toward General Education requirements
C) Minor Required (or second major)
D) General Baccalaureate Degree Requirements

Not Attached

Total Hours: unchanged

What is changing? Check all boxes that apply:

4

☐ Title change

☐ Course changes of under 18 hours

☐ Course changes of 18 hours or more

☐ From option to program (major)

☐ From program (major) to option

☑ Other

modifying one track description.

Reason for Proposed Change:

We want to emphasize that anyone interested in joining the health industry, including pre-med, pre-dental, pre-optometry, pre-pharm, etc are encouraged to pursue this option.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

02/20/2018

Current Status:

College Council Review

Proposal Progress:

02/21/2018 - Submitted by Department Head (Bryan Breyfogle)

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR **MENT.**

5

Missouri State

Curricular Action Workflow

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Change Program Proposal Form

Submitted on 02/21/2018 by Matthew Siebert (MSiebert@MissouriState.edu).

Department:

Chemistry

Type of Program

Choose One:

○ Non-Comprehensive Undergraduate Major	○ Option	○ Certification
◉ Comprehensive Undergraduate Major	○ Minor	○ Academic Rules
○ Graduate Program	○ Certificate	○ Other

Does this program include any new courses?

○ No ○ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Chemistry/Graduate School-BS

Current Catalog Description: (Either cut and paste present description from online catalog **OR** provide as an attachment below)

5

Chemistry (Comprehensive)
Bachelor of Science
A) General Education Program and Requirements
B) Major Requirements
1) CHM 160(4), 161(1), 170(3), 171(1), 302(5), 342(5), 343(5), 375(3), 398(1)*, 452(3), 492(0), 498(1)*, 502(4), 506(3), 507(3), 508(2), 575(3)
2) Related science and mathematics requirements:
a) MTH 287 and 288(6) or MTH 261** and 280(10) or MTH 261** and 288(8)
b) PHY 123** and 124(8) or PHY 203** and 204(10)
c) Recommended: CSC 111(3)
3) Public Affairs Capstone Experience will be fulfilled by completion of CHM 398 and 498(2); and CHM 397 or 399 or 499(1)
4) Complete requirements in one of the following options:
a) Biochemistry: This program is designed for students preparing for a career in medicine or graduate study in biochemistry. Required courses: CHM 399(1-3)* or 499(1-3)*, 453(2), 552(3), 553(2); BIO 121(4)**, 235(4), 320(4). Suggested elective: BIO 310(5). Premedical students should also take courses in anatomy and physiology.
b) Graduate School: This program is designed for students preparing for graduate study in chemistry. Required courses: CHM 376(2), 499(1-3)*, 509(2); Select one: CHM 514(3), 542(3), 552(3). Suggested electives: one year foreign language
c) Industrial: This program is designed for students preparing for industrial positions upon completion of the BS degree, but who wish to be prepared for future entry into graduate school. Required courses: CHM 376(2), 509(2), 514 or 542(3), four hours selected from CHM 397(2)*, 399(1-3)*, 499(1-3)*
*Will also count toward Public Affairs Capstone Experience requirement
**Will also count toward General Education requirements
C) General Baccalaureate Degree Requirements

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] **OR** provide as an attachment below)

Chemistry (Comprehensive)
Bachelor of Science
A) General Education Program and Requirements
B) Major Requirements
1) CHM 160(4), 161(1), 170(3), 171(1), 302(5), 342(5), 343(5), 375(3), 398(1)*, 452(3), 492(0), 498(1)*, 502(4), 506(3), 507(3), 508(2), 575(3)
2) Related science and mathematics requirements:
a) MTH 287 and 288(6) or MTH 261** and 280(10) or MTH 261** and 288(8)
b) PHY 123** and 124(8) or PHY 203** and 204(10)
c) Recommended: CSC 111(3)
3) Public Affairs Capstone Experience will be fulfilled by completion of CHM 398 and 498(2); and CHM 397 or 399 or 499(1)
4) Complete requirements in one of the following options:
a) Biochemistry: This program is designed for students preparing for ~~a career in medicine or~~ graduate study **and/or careers** in biochemistry. Required courses: CHM 399(1-3)* or 499(1-3)*, 453(2), 552(3), 553(2); BIO 121(4)**, 235(4), 320(4). Suggested elective: BIO 310(5). ~~Premedical students should also take courses in anatomy and physiology.~~
b) Graduate School**/Industrial**: This program is designed for students preparing for graduate study in chemistry **and/or industrial positions**. Required courses: CHM 376(2), ~~499(1-3)*,~~ 509(2); Select one: CHM 514(3), 542(3), 552(3)~~.~~**; two hours selected from CHM 397(2)*, 399(1-2)*, 499(1)*** ~~Suggested electives: one year foreign language~~
~~c) Industrial: This program is designed for students preparing for industrial positions upon completion of the BS degree, but who wish to be prepared for future entry into graduate school. Required courses: CHM 376(2), 509(2), 514 or 542(3), four hours selected from CHM 397(2)*, 399(1-3)*, 499(1-3)*~~
*Will also count toward Public Affairs Capstone Experience requirement
**Will also count toward General Education requirements
C) General Baccalaureate Degree Requirements

Not Attached

Total Hours: unchanged

What is changing? Check all boxes that apply:

☐ Title change

☐ Course changes of under 18 hours

☐ Course changes of 18 hours or more

☐ From option to program (major)

☐ From program (major) to option

☑ Other: Combining two options that were very similar. Modifying description of one track.

5

Reason for Proposed Change:

External department reviewer noticed similarity between options and commented that having them separated might be confusing to students. Biochemistry faculty have noted that the biochemistry track is more appropriate for students pursuing graduate studies in biochemistry rather than for pre-health students (who would be better served by a non-comp. degree).

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

02/20/2018

Current Status:

College Council Review

Proposal Progress:

02/21/2018 - Submitted by Department Head (Bryan Breyfogle)

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR MENT.

6

Missouri State.

Curricular Action Workflow

designed by Computer Services

Change Program Proposal Form

Submitted on 02/02/2018 by Matthew Siebert (MSiebert@MissouriState.edu).

Department:

Chemistry

Type of Program

Choose One:

○ Non-Comprehensive Undergraduate Major	○ Option	○ Certification
○ Comprehensive Undergraduate Major	◉ Minor	○ Academic Rules
○ Graduate Program	○ Certificate	○ Other

Choose All That Apply:

☑ Bachelor of Arts	☐ Bachelor of Music Education	☐ Bach of Science in Athl Traing
☐ Bachelor of Applied Science	☐ Bachelor of Music	☐ Bach of Science in Education
☐ Bachelor of Fine Arts	☑ Bachelor of Science	☐ Bachelor of Science in Nursing
☐ Bachelor of Social Work		

Does this program include any new courses?

○ No ○ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Chemistry

Current Catalog Description: (Either cut and paste present description from online catalog **OR** provide as an attachment below)

Chemistry
Bachelor of Arts
Bachelor of Science

A. CHM 160(4), 161(1), 170(3), 171(1); CHM 201(3) and 202(2) or CHM 342(5)
B. Select an emphasis area from the options below:
a. Analytical: CHM 302(5)
b. Biochemistry: CHM 352(3) and 353(2); or CHM 452(3) and 453(2)
c. Environmental: CHM 460(3) and 461(3)
d. Inorganic: CHM 375(3) and 376(2)
e. Organic: CHM 343(5) or 344(3); and CHM 514(3) or CHM 542(3)
f. Physical: CHM 506(3); and CHM 507(3) or 508(2)
g. Student Option: Select at least 8 hours in CHM courses numbered 302 or higher.

Declare a minor in chemistry by contacting the Registrar, either by email or in person, with your intent to declare a minor. There is no fee or form required by the chemistry department to declare a minor in chemistry.

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] **OR** provide as an attachment below)

Chemistry
Bachelor of Arts
Bachelor of Science
A. CHM 160(4), 161(1), 170(3), 171(1); CHM 201(3) and 202(2) or CHM 342(5)
B. Select an emphasis area from the options below:
a. Analytical: CHM 302(5)
b. Biochemistry: CHM 352(3) and 353(2); or CHM 4~~52~~**554**(3) and ~~453~~**555**(2)
c. Environmental: CHM 460(3) and 461(3)
d. Inorganic: CHM 375(3) and 376(2)
e. Organic: CHM 343(5) or 344(3); and CHM 514(3) or CHM 542(3)
f. Physical: CHM 506(3); and CHM 507(3) or 508(2)
g. Pre-health: CHM 343(5); and 352(3) or 554(3)
g~~h~~. Student Option: Select at least 8 hours in CHM courses numbered 302 or higher.
Declare a minor in chemistry by contacting the Registrar, either by email or in person, with your intent to declare a minor. There is no fee or form required by the chemistry department to declare a minor in chemistry.

Not Attached

Total Hours: unchanged

What is changing? Check all boxes that apply:

- ☐ Title change
- ☐ Course changes of under 18 hours
- ☐ Course changes of 18 hours or more
- ☐ From option to program (major)
- ☐ From program (major) to option
- ☑ Other adding an optional track.

Reason for Proposed Change:

Codifying an option useful for many students pursuing a minor in chemistry. The courses 452 and 453 have new course numbers (554 and 555, respectively), but have not been appropriately updated in the minor.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

09/19/2017

6

Current Status:

College Council Review

Proposal Progress:

02/02/2018 - Submitted by Department Head (Bryan Breyfogle)

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR **MENT.**

Missouri State.

Curricular Action Workflow

7

designed by Computer Services

New Interdisciplinary Program Proposal Form

Submitted on 02/21/2018 by Matthew Siebert (MSiebert@MissouriState.edu).

This special form is to be used for internal Missouri State approval of a new Interdisciplinary program involving two or more academic departments/schools including graduate programs, undergraduate majors (comprehensive or non-comprehensive), minors, graduate certificates, undergraduate certificates.

New graduate programs, new undergraduate majors, and certificate programs involving more than 18 credit hours require approval by the CBHE as well as approval through the Missouri State curricular process. CBHE applications for such programs are processed through the Office of Institutional Research. All proposals for new programs requiring CBHE approval should progress through the Missouri State curricular process accompanied by a draft of the required CBHE documentation.

Only select departments with at least 9 hours or at least 30% of total program hours.

Sponsoring Department (1): (responsible for administration and budget)

Chemistry

Sponsoring Department (2):

Biology

Sponsoring Department (3): (if applicable)

Biomedical Sciences

Sponsoring Department (4): (if applicable)

Proposed Program Title:

Foundations of Pharmaceutical Science

Choose One:

○ Major (Non-Comprehensive/Graduate Program)

○ Comprehensive Major

○ Minor

◉ Undergraduate Certificate

○ Graduate Certificate

○ Master's Degree

Select Degree Type (or Select Graduate Certificate or Undergraduate Certificate):

UGCT - Undergraduate Certificate

General Education Courses Required:

None

7

Total Hours: 0

General Education Courses Recommended:

None

Total Hours: 0

Requirements (including Admission) and Limitations for Specific Degree/Program:

Foundations of Pharmaceutical Science Certificate
Foundations of Pharmaceutical Science
This interdisciplinary certificate provides students with broad exposure to foundational courses in the sciences required for pursuit of a Pharm. D. or a career in pharmaceutical science.
Admission Requirements
To be admitted students must have declared pre-pharmacy.
Program requirements (17-18 hours)
A. BIO 310(5), BMS 307 (4), CHM170(3), and CHM171(1)
B. Complete requirements in one of the following areas of emphasis:
a. Biology: BIO320(4) or BIO361(4) or BIO511(4).
b. Biomedical Science: BMS 308(4) or BMS 321(4) or BMS 442(3).
c. Chemistry: CHM342(5).

Total Hours: 17-18

Prerequisites for Required Courses:

BIO310 Prerequisite: "C-" or better in BIO 235 or BMS 230 or BMS 231; and "C-" or better in CHM 116 and 117 or CHM 160.
BMS 307 Prerequisite: C grade or better in BMS 110 and 111 or BIO 121.
CHM170 Prerequisite: "C-" grade or better in CHM 160.
CHM171 Prerequisite: CHM 170 or concurrent enrollment; and a "C-" or better in CHM 160 and CHM 161.
BIO320 Prerequisite: "C-" or better in BIO 235 or, BMS 230 and BMS 232, or BMS 231; and "C-" or better in CHM 201 and 202, or CHM 342.
BIO361 Prerequisite: "C-" or better in BIO 235.
BIO511 Prerequisite: BIO 210 or BIO 310 or BIO 320 or BMS 521.
BMS308 Prerequisite: C grade or better in BMS 307 or BIO 380; and C grade or better in CHM 116 or CHM 160.
BMS321 Prerequisite: C grade or better in BMS 231.
BMS442 Prerequisite: C grade or better in BMS 307; and BMS 321 or BIO 320 or CHM 352 or CHM 452 or concurrent enrollment.
CHM342 Prerequisite: "C-" grade or better in both CHM 170 and CHM 171.

Recommended Electives:

None

Total Hours: 0

Limitations on Electives:

None

Please attach the following documents: (only one file may be attached for each requirement; accepts file types of PDF, DOC or DOCX)

7

1. Statement of Rationale: *Attached*

2. Estimated costs for first five years: *Attached*

3. Complete catalog description (including new courses and course changes pending approval): *Attached*

4. If proposal is for a new degree program, you must submit an application to the Missouri Department of Higher Education (MDHE).

- A. Use the templates below to create your application.
  New Undergraduate Major (or certificate with more than 18 hours) | New Graduate Program (or certificate with more than 18 hours)
- B. Upload and attach the completed MDHE application. *Not Attached*

*If you require assistance to complete the application, contact Julie Masterson, Graduate College, 836-5335.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

02/20/2018

Current Status:

College Council Review;College Council Review

Proposal Progress:

02/21/2018 - Submitted by Department Head (S Mathis)
02/21/2018 - Submitted by Department Head (Bryan Breyfogle)
02/21/2018 - Submitted by Department Head (Colette Witkowski)

Review Comments:

No comments have been added to this proposal.

[redacted]

7

Statement of Rationale

The Foundations of Pharmaceutical Science certificate provides students with broad exposure to foundational courses in the sciences required for pursuit of a Pharm. D. or a career in pharmaceutical science. The admission criteria for a Pharm. D. program do *not* include completion of a Bachelor's degree, rather just select prerequisite courses. For this reason, many students who pursue a Pharm. D. do not complete a Bachelor's degree. This certificate may provide them with a competitive edge when pursuing admission to a Pharm. D. program or when seeking employment in pharmaceutical science.

7

Estimated Costs (First Five Years)

The admission criteria for a Pharm. D. program do *not* include completion of a Bachelor's degree, rather just select prerequisite courses. These prerequisite courses are included in the certificate program of study. Hence, these are courses that the student is already taking and, therefore, there will be no additional costs in providing this certificate.

7

Foundations of Pharmaceutical Science Certificate

Foundations of Pharmaceutical Science

This interdisciplinary certificate provides students with broad exposure to foundational courses in the sciences required for pursuit of a Pharm. D. or a career in pharmaceutical science.

Admission Requirements

To be admitted students must have declared pre-pharmacy.

Program requirements (17-18 hours)

A. BIO 310(5), BMS 307(4), CHM 170(3), and CHM171(1)
B. Complete requirements in one of the following areas of emphasis:
    a. **Biology**: BIO320(4) or BIO361(4) or BIO511(4).
    b. **Biomedical Science**: BMS 308(4) or BMS 321(4) or BMS 442(3).
    c. **Chemistry**: CHM342(5).

8

Missouri State.

Curricular Action Workflow

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Change Course Proposal Form

Submitted on 02/08/2018 by Krista Evans (KristaEvans@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

PLN572 Community Planning Practicum

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Current online catalog description:

PLN 572 Community Planning Practicum

Prerequisite: PLN 571. Focuses on the process of plan preparation and is intended to provide experience in the application of planning principles and analytical techniques learned in other program courses to a planning problem in an area community. Students will work on an individual basis and as part of a team in preparing a final report. May be taught concurrently with PLN 672. Cannot receive credit for both PLN 572 and PLN 672. Public Affairs Capstone Experience course. 4(3-2) S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

PLN 572 Community Planning Practicum

Prerequisite: PLN 571. Focuses on the process of plan preparation and is intended to provide experience in the application of planning principles and analytical techniques learned in other program courses to a planning problem in an area community. Students will work on an individual basis and as part of a team in preparing a final report. **Field trip (s) required.** May be taught concurrently with PLN 672. Cannot receive credit for both PLN 572 and PLN 672. Public Affairs Capstone Experience course. 4(3-2) S

What is changing? Check all boxes that apply.

☐ Course Code ☐ Course Number (Check Availability) ☐ Title ☐ Prerequisite

☐ Credit Hours/Contact Hours ☐ Periodicity ☑ Description

8

Reason for proposed change

To ensure that students understand that field/site visits are required for a practicum course.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

How did you determine the need for this change? Check all boxes that apply or specify other.

☐ Routine or annual review/assessment of curriculum ☑ Faculty Input ☐ Student Input

☐ Accreditation/certification compliance ☐ Review of catalog information

☐ Other (be specific):

☑ Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 01/29/2018

Current Status:

College Council Review

Proposal Progress:

02/13/2018 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR MENT.

9

Missouri State.

Curricular Action Workflow

designed by Computer Services

Change Course Proposal Form

Submitted on 02/08/2018 by Krista Evans (KristaEvans@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

GRY322 Urban Geography

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Current online catalog description:

GRY 322 Urban Geography

With an emphasis on patterns, this course documents the growth of cities, the reasons for that growth, presents models of urban structure, describes transportation systems, residential concentration, and commercial activities. Finally, current urban problems are identified. 3(3-0) F

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

GRY 322 Urban Geography

With an emphasis on patterns, this course documents the growth of cities, the reasons for that growth, presents models of urban structure, describes transportation systems, residential concentration, and commercial activities. Finally, current urban problems are identified. **Field trip required.** 3(3-0) F

What is changing? Check all boxes that apply.

☐	Course Code	☐	Course Number (Check Availability)	☐	Title	☐	Prerequisite
☐	Credit Hours/Contact Hours	☐	Periodicity	☑	Description		

9

Reason for proposed change

Ensure students are aware of the field trip requirement for this course.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

How did you determine the need for this change? Check all boxes that apply or specify other.

☐	Routine or annual review/assessment of curriculum	☑	Faculty Input	☐	Student Input
☐	Accreditation/certification compliance	☐	Review of catalog information		
☐	Other (be specific):				
☑	Check if this is a non-substantive change.				

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 01/29/2018

Current Status:

College Council Review

Proposal Progress:

02/13/2018 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR MENT.

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Missouri State.

designed by Computer Services

Curricular Action Workflow

Change Program Proposal Form

Submitted on 02/22/2018 by Rajinder Jutla (Rajinderjutla@missouristate.edu).

Department:

Geography, Geology, & Planning

Type of Program

Choose One:

○ Non-Comprehensive Undergraduate Major	○ Option	○ Certification
○ Comprehensive Undergraduate Major	○ Minor	○ Academic Rules
○ Graduate Program	◉ Certificate	○ Other

Does this program include any new courses?

○ No ○ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Planning and Development-Undergraduate Certificate

Current Catalog Description: (Either cut and paste present description from online catalog **OR** provide as an attachment below)

Planning and Development Certificate
Planning and development
The certificate in Planning and Development provides a 13 hour undergraduate level program for city employees (including city administrators), planning commissioners, council members, developers, and other practitioners who wish to familiarize themselves with the basics of the planning profession. Students interested in obtaining this certificate are welcome to enroll.

Program requirements (13 hours)
PLN 371(3) or 372(3); PLN 572(4) or 576(4)
Six additional hours from GRY 322(3) or PLN courses numbered above 371

Not Attached

Complete New Catalog Description: (Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission] **OR** provide as an attachment below)

10

Small Town Planning and Development Certificate

The certificate in **Small Town Planning and Development** provides a 13 hour undergraduate level program for city employees (including city administrators), planning commissioners, council members, developers, and other practitioners who wish to familliarize themselves with the basics of the planning profession. Students interested in obtaining this certificate are welcome to enroll.
Program requirements (13 hours)
PLN 371(3) or 372(3); PLN 572(4) or 576(4)
Six additional hours from GRY 322(3) or PLN courses numbered above 371

Not Attached

Total Hours: 13

What is changing? Check all boxes that apply:

- ☑ Title change
- ☐ Course changes of under 18 hours
- ☐ Course changes of 18 hours or more
- ☐ From option to program (major)
- ☐ From program (major) to option
- ☐ Other

Reason for Proposed Change:

Reflects the focus of the certificate.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

12/08/2017

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR MENT.

11

Missouri State.

Curricular Action Workflow

Designed by Computer Services

New Course Proposal Form

Submitted on 02/13/2018 by Toby Dogwiler (TDogwiler@MissouriState.edu).

***All fields require input**

(•) New COURSE

( ) New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: GEO

Course Number: (Check Availability) 669

Course Title: Landscape Analysis

Will this course become part of a program? ( ) No ( ) Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? ( ) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (•) No ( ) Yes

Prerequisite/Co-requisite or enter 'None': GEO 200 or GEO 363 or Instructor's Permission

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability, UG/GR parallel course, etc.)

A project-based exploration of geospatial methods and processing techniques for the analysis, modeling, and prediction of hydrologic and geomorphic processes at various landscape scales. An emphasis will be placed on the applications of digital elevation models, remotely sensed data, and modeling techniques to understand landscape processes of interest to fields such as geology, physical geography, agriculture, soils, ecological systems, and archaeology. May be taught concurrently with GEO 669. Cannot receive credit for both GEO 569 and GRY 669.

Credit Hours: 3 Lecture Contact Hours: 1 Lab Contact Hours: 2

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

11

Periodicity. Check all that apply.

☐	Fall	☑	Fall (even-numbered years only)	☐	Fall (odd-numbered years only)
☐	Spring	☐	Spring (even-numbered years only)	☐	Spring (odd-numbered years only)
☐	Summer	☐	On Demand only		

Complete Catalog Description:
GEO 569 Landscape Analysis
Prerequisite: GEO 200 or GEO 363 or Instructor's Permission
A project-based exploration of geospatial methods and processing techniques for the analysis, modeling, and prediction of hydrologic and geomorphic processes at various landscape scales. An emphasis will be placed on the applications of digital elevation models, remotely sensed data, and modeling techniques to understand landscape processes of interest to fields such as geology, physical geography, agriculture, soils, ecological systems, and archaeology. May be taught concurrently with GEO 669. Cannot receive credit for both GEO 569 and GRY 669.
Credit hours: 3 Lecture contact hours: 1 Lab contact hours: 2
Typically offered: Fall (even-numbered years only)

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

Attached

Purpose of Course

This will be mostly project-based and will focus on the application of GIS toward the solution of real-world hydrologic and geomorphic problems at various scales from edge-of-field to large watersheds. These skills are in demand by employers in industries that typically hire our majors. The corresponding graduate version of the course (GEO 669) is being developed as an option in the revised core of the Geospatial Science MS program.

Relationship to Other Departments

This course may be of interest to students in the fields of geology, physical geography, agriculture, soils, ecological systems, and archaeology.

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

New Course Resource Information

Anticipated Average Enrollment per section:	10	Maximum Enrollment Limit per section:	15
Anticipated Average Enrollment per semester:	10	Maximum Enrollment Limit per semester:	15
Anticipated Average Enrollment per year:	10	Maximum Enrollment Limit per year:	15
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ◉ No ○ Yes

What will this course require in the way of:

Additional library Holdings

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No

Additional computer resources

No

Additional or remodeled facilities

No

Additional equipment or supplies

No

Additional travel funds

No

Additional faculty; general vs specialized

No

Additional faculty; regular vs per-course

No

Other additional expenses

No

If additional faculty are not required, how will faculty be made available to teach this course?

This course has been taught the past two years as a topics course (GRY 597/697) by a new faculty member (Toby Dogwiler). The proposed course will remain part of his regular load in alternate years.

List names of current faculty qualified and available to teach this course

Toby Dogwiler

What is the anticipated source of students for this course?

The course can count as elective for the Geospatial major and, with prior approval, for the Geology major (Comp and Non-Comp). A proposed parallel graduate course will be an option in the revised core of the Geospatial M.S. program.

If from within the department, will students be taking this course in addition to or in place of other courses?

For undergraduate Geospatial Science Majors this course will be an elective. We anticipate that other elective courses in the major may be offered less frequently. This is partly in response to redirecting some GEO faculty load to teaching our new GEO 200 general education course.

If from outside the department, which courses in other departments would most likely be affected?)

We are not aware that the proposed course will affect courses in any other department.

Other comments:

A parallel graduate course GEO 669 is being proposed simultaneously.

11

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 12/08/2017

Current Status:

College Council Review

Proposal Progress:

02/13/2018 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

[redacted]

GEO 669 Landscape Analysis — 3 cr

Dr. Toby Dogwiler
TDogwiler@MissouriState.edu

Office: 358 Temple Hall (enter through TEM 354)
Class Room: Temple 340
GEO 569, 12:30 – 1:20 TR

Office Hours: M-1:15-3:15, W-9:00-11:30, or by appointment

Academic Dishonesty

I have no tolerance for academic dishonesty. There is no place for any form of academic dishonesty in a university. As such, if you are caught cheating, fabricating or misconducting research, plagiarizing, or facilitating academic dishonesty in any of its forms, I will FAIL you in this course. This is your only warning.

Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. You are responsible for knowing and following the university's student honor code, which is entitled "Student Academic Integrity Policies and Procedures" and is available at the Reserves Desk in Meyer Library or online[1]. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy. Specifically, you will fail the course.

Course Goal

This 3-credit course will be mostly project-based and will focus on the **application** of GIS toward the solution of real-world hydrologic and geomorphic problems at various scales from edge-of-field to large watersheds.

Catalog Description

Prerequisite: GEO 200 or GEO 363 or Instructor's Permission.

An exploration of geospatial methods and processing techniques for the analysis, modeling, and prediction of hydrologic and geomorphic processes at various landscape scales. An emphasis will be placed on the applications of digital elevation models, remotely sensed data, and modeling techniques to understand landscape processes of interest to fields such as geology, physical geography, agriculture, soils, ecological systems, and archaeology. May be taught concurrently with GEO 669. Cannot receive credit for both GEO 569 and GEO 669.

Course Topics

This following list of topics / projects is tentative and may be changed or added to as the semester progresses. The projects and assignments for the course will be based, at least in part, on the abilities and interests of the students.

- Hydrologic and Topographic Data Acquisition and Processing
- Hydrologic Conditioning of DEMs
- Watershed Delineation
- Stream Delineation and Calibration
- Spatial Analysis of Hydrologic Data
- Temporal Analysis of Hydrologic Data
- Modeling and Predicting Erosion

[1] http://www.missouristate.edu/assets/policy/Op3_01_Academic-Integrity-Policies-and-Procedures-07-28-2014.pdf and http://www.missouristate.edu/academicintegrity/policies.htm

Textbook and Resources

Required

- There will not be a specific required textbook. Assigned readings will be available on-line or electronically.
- You are required to have TWO (2) 8 GB or larger flashdrives. You will submit GIS projects on these flashdrives. Typically, I will have one that I am grading and you will have the other flashdrive for your current project. You should not count on using these flashdrives for other courses / purposes. You need to visibly label your flashdrive with your name.
- You need access to **MyMissouriStatelive@edu** accounts to stay connected to both class and university announcements and to access our Blackboard site.
- **Blackboard page**

Example Readings

Tomer, M.D., Porter, S.A., James, D.E., Boomer, K.M.B., Kostel, J.A., McLellan, E., 2013. Combining precision conservation technologies into a flexible framework to facilitate agricultural watershed planning. Journal of Soil and Water Conservation 68, 113A-120A.

Wilson, J.P., Gallant, J.C., 2000. Terrain Analysis: Priciples and Applications, 1st ed. John C. Wiley and Sons, Inc., New York, NY, p. 479.

Schroeder, K.E., Peterson, E.W., Dogwiler, T.J., 2015. Field Validation of DEM- and GIS-Derived Longitudinal Stream Profiles. Journal of Earth Science Research 3, 43-54.

Mancini, F., Dubbini, M., Gattelli, M., Stecchi, F., Fabbri, S., Gabbianelli, G., 2013. Using Unmanned Aerial Vehicles (UAV) for High-Resolution Reconstruction of Topography: The Structure from Motion Approach on Coastal Environments. Remote Sensing 5, 6880-6898.

Grading and Assignments

I will total the number of points available for the course and the points you have earned to figure your final grade using the following scale, which also applies to all assignments:

A = 90 – 100%; B = 80 – 89%; C = 70 – 79%; D = 60 – 69%; F = 59.99% and below. Note: an 89.9999% is a 'B', and so forth. Lines have to be drawn somewhere!

Projects 60% + Class Participation 25% + Exams / Quizzes 15% = 100% of your grade

Note: The structure and content of this course will depend, at least in part, on the interests of the students in the class. As such, the percentages stated above may be adjusted by up to 10%, at the discretion of the instructor, based on how the class evolves. Any changes to the grading scale will be discussed with students well before the final exam.

Note about Graduate Credit

This course is normally cross-listed with the graduate-level GEO 669 course. As undergraduate students in this course you will have a different set of expectations and a different grading system. At a minimum, students taking GEO 669 are required to complete additional steps on most projects, answer different or additional questions on quizzes and exams, and give a project presentation to the class.

Projects: This class will be primarily project-based. The goal is for you to learn how to apply GIS tools to understand, analyze, and predict hydrologic and geomorphic phenomena across the landscape. I believe the best way to learn this is by doing it—in other words: to get your hands-on GIS and it's processing tools.

Class Participation: This will include attendance, participating in discussions, working on in-class assignments (which may also be part of the grade for various projects), and other activities that occur during regular class time.

Exams / Quizzes: As a project-based course, the role of exams and quizzes is diminished. The main purpose of these assessments will be to enforce reading and other assignments and require you to demonstrate your practical GIS skills.

Attendance Policy
Here are the guidelines for attendance in GEO 569:

- Many of the things we do in class are difficult or impossible to make-up. So don't miss class!
- If you are not in class, you are still responsible for the information; you **cannot** make-up class activities and points offered during classes, except in extremely rare circumstances, which will be considered on a case-by-case basis for approval by the instructor. Generally, such excused absences and make-ups will require pre-approval PRIOR to the absence.
    - Weddings, vacations, colds, sniffles, headaches, hangovers, and birthdays are **NOT** acceptable excuses.
- If you will be absent from class for a university-sanctioned event, you need to present written documentation to me PRIOR to the class you will miss in order to make up missed points.
- If you miss class (excused or unexcused) it is your responsibility to obtain the information and assignments you missed. You are responsible for the content and for completing assignments even if your absence is unexcused (and therefore cannot be made up for a grade).
- Please do not be tardy to class.
- I will evaluate your ability to complete the course in the event of excessive undocumented absences. More than four undocumented absences will require a meeting with me and will be grounds for failing the course, unless we agree on a plan for the rest of the semester and you adhere to it.
- If you have an emergency, contact the Academic Advisement Center (417-836-5258) and an advisor will notify your instructors.
- Assignments must be turned in at the beginning of the class period of the due date to receive full credit. Student may receive up to 50% if the assignment is turned in within 24 hours of a due date. Assignments turned in after 24 hours receives 0%. Exceptions will be made with verifiable emergencies (see above). Speak with me as soon as possible if you have an emergency or a problem with a deadline.

Bottom line: If you're not here, you will miss valuable input from your classmates, as well as the understanding provided through class discussions. I expect you to be here and to be ready to think and to participate.

POLICIES

Student Responsibilities
The following policies explain the manner in which I expect students to conduct themselves in my classroom:

Assignments--All assignments completed outside of class must be typed, 12 point font, Calibri, double-spaced, with 1 inch margins unless otherwise instructed. Assignments must be turned in at the beginning of the class period by the due date to receive full credit. If you are tardy, by definition, you are unable to submit an assignment at the beginning of class. Most assignments will be distributed through BlackBoard or in class. It is your responsibility to check Blackboard regularly.

Be prepared for class—assigned reading should be completed before class. In order for you to receive the most from this course, you need to be prepared to share your knowledge and to learn from your peers.

Make-up Examinations and Quizzes: Make-up exams are rarely approved or offered by the instructor. If you miss an exam for an extenuating reason (e.g., due to hospitalization, serious illness, or family emergency) special consideration may be granted at the discretion of the instructor. Whenever possible students should notify the instructor in advance and request approval.

Work obligations, common illness (colds, flus, etc.), weddings, rides home, and vacations are NOT suitable excuses for missing an exam. I expect that you will adapt your work schedule to the requirements and schedule of this course. Work is something you do to afford your education and I believe strongly that education and coursework should be the first priority of every student.

In the rare case that a make-up exam is approved it will be given during the final examination period (in addition to the

regular final exam). This make-up exam will be comprehensive. If a make-up for the Final Exam is approved an alternate time will be arranged. The content, format, and comprehensiveness of make-up exams is the sole discretion of the instructor.

Generally, quizzes will not be offered for make-up for any reason. If the instructor approves an excused absence that results in missing a quiz, the missed quiz will be replaced with your average quiz score on all other quizzes.

Email and Communication—

- Emails from me will be sent through Blackboard to your MSU email account. Check it regularly.
- I encourage you to register for the Remind service (see BlackBoard). I will use Remind to send brief announcements and reminders to the class. *You must still check email. Some announcements and information are not suitable for text messaging.* Remind is an excellent way to ask and receive quick questions about class and projects.
- Use proper e-mail etiquette, as described on the first day of class, when sending e-mails to each other or the instructor. These should be respectful, professional, not have slang (e.g. "u" instead of "you"), and be well-written. **Be sure to include your name in the body of the email and "GEO 569" in the subject line.** E-mails should come from the Windows Live account you have as a student. I will strive to respond promptly to e-mails. Nonetheless, if you do not receive a response within a reasonable timeframe (one business day for most purposes), please politely resend your message.
- **If we are playing "*communication tag*", assume that you are always "*it*".**
- Note: Most of your assignments will be submitted via blackboard or flashdrive. Generally, assignments will not be accepted via email.

Use of Cell Phones, tablets, and other similar technology devices in classes—As a member of the learning community, each student has a responsibility to other students who are members of the community. When cell phones ring and students respond in class or leave class to respond, it disrupts the class. Therefore, the Office of the Provost prohibits the use by students of cell phones, pagers, tablets, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class. Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away. Other exceptions to this policy may be granted at the discretion of the instructor.

- **Using any device or technology during class in a way that distracts other course participants is strictly forbidden.** Failure to comply with this policy will result in the loss of points in the course. Repeated offenses will result in escalated penalties, as determined by the instructor.
- **Communicate with Respect and Civility**--In alignment with section 2.4 of the Missouri State Code of Students' Rights and Responsibilities, all class communication must follow those guidelines to remain productive. I strongly encourage students to express their opinion, but not at the expense of being disrespectful to others. When you are speaking, please be sensitive to others and make your statements in a respectful way. When you are listening, please respect the viewpoint and perspective of the speaker and give them the benefit of the doubt that they are doing their best to respect you. Differences of opinion should be an opportunity for learning and discussion, not a reason to attack or become defensive.

EMERGENCY RESPONSE PLAN

At the first class meeting, students should become familiar with a basic emergency response plan through a dialogue with the instructor that includes a review and awareness of exits specific to the classroom and the location of evacuation centers for the building. Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with the instructor. For more information, go to http://www.missouristate.edu/safetran/51597.htm and http://www.missouristate.edu/safetran/erp.htm.

Shelter Information (in case of severe weather).

Building	Shelter Information
Temple Hall	2nd floor and 3rd floor, Shelter in interior labs and classrooms

Evacuation Instructions (in case the building needs to be evacuated for events such as fire, gas leak, etc.)

Building	Evacuation Information
Temple Hall	North to Meyer Library Main Entrance; Alternate: Northwest to Glass Hall rooms 101, 102 and 108; and West to Kemper Hall. (Destination will be determined by type of emergency and weather condition.)

Academic Integrity Policy

There is a reason that I stated my "Academic Dishonesty" policy on the first page of this syllabus. I take it very seriously. Please see the first page of this syllabus for the course policies specific to this section of GEO 569. You are responsible for knowing and following the university's student honor code, *Student Academic Integrity Policies and Procedures* at the following website: http://www.missouristate.edu/academicintegrity/policies.htm. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

Nondiscrimination Policy

Missouri State University is an equal opportunity/affirmative action institution and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Institutional Equity and Compliance, Park Central Office Building, 111 Park Central Square, Suite 111, (417) 836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can also be brought to the attention of your instructor's Department Head. Please visit the Office for Institutional Equity and Compliance website at http://www.missouristate.edu/equity.

Disability Accommodation

To request academic accommodations for a disability, contact the Director of the Disability Resource Center, Meyer Library, Suite 111, (417) 836-4192 or (417) 836-6792 (TTY), www.missouristate.edu/disability. Students are required to provide documentation of disability to the Disability Resource Center prior to receiving accommodations. The Disability Resource Center refers some types of accommodation requests to the Learning Diagnostic Clinic, which also provides diagnostic testing for learning and psychological disabilities. For information about testing, contact the Director of the Learning Diagnostic Clinic at (417) 836-4787 or visit http://psychology.missouristate.edu/ldc.

Policy Regarding Dropping a Class

It is your responsibility to understand the University's procedure for dropping a class. If you stop attending this class but do not follow proper procedure for dropping the class, you will receive a failing grade and will also be financially obligated to pay for the class. For information about dropping a class or withdrawing from the university, contact the Office of the Registrar at 836-5520.

Other important dates and deadlines: Academic Calendar: http://calendar.missouristate.edu/academic.aspx

Religious Accommodation: The University may provide a reasonable accommodation based on a person's sincerely held religious belief. In making this determination, the University reviews a variety of factors, including whether the accommodation would create an undue hardship. The accommodation request imposes responsibilities and obligations on both the individual requesting the accommodation and the University. Students who expect to miss classes, examinations, or other assignments as a consequence of their sincerely held religious belief shall be provided with a reasonable alternative opportunity to complete such academic responsibilities. It is the obligation of students to provide faculty with reasonable notice of the dates of religious observances on which they will be absent by submitting a Request for Religious Accommodation Form to the instructor by the end of the third week of a full semester course or the end of the second week of a half semester course.

Amendment: The instructor reserves the right to amend, correct, or change this syllabus in any manner I deem necessary provided I give notice of any substantial changes at a regularly scheduled class meeting or through email and make the updated copy available on Blackboard. Simple editorial and grammatical corrections will not require notification.

Copyright Policy:

Missouri State.

Curricular Action Workflow

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designed by Computer Services

New Course Proposal Form

Submitted on 02/27/2018 by Kartik Ghosh (Kartikghosh@missouristate.edu).

***All fields require input**

(•) New COURSE

( ) New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: PHY

Course Number: (Check Availability) 591

Course Title: Computation and Data Analysis in Physical Sciences

Will this course become part of a program? ○ No ○ Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? ○ No ○ Yes

Will this proposal need to be reviewed by EPPC? (•) No ○ Yes

Prerequisite/Co-requisite or enter 'None': MTH 302

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability, UG/GR parallel course, etc.)

Computational techniques related to physical sciences including techniques used for data analysis. An exploration of scientific operating systems, programs used for analysis and simulations, and methods for analyzing data and producing simulations. May be taught concurrently with PHY 692. May only receive credit for one of PHY 591 or PHY 692. 3(3-0) F.

Credit Hours: 3 Lecture Contact Hours: 3 Lab Contact Hours: 0

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

Periodicity. Check all that apply.

☐	Fall	☐	Fall (even-numbered years only)	☑	Fall (odd-numbered years only)
☐	Spring	☐	Spring (even-numbered years only)	☐	Spring (odd-numbered years only)
☐	Summer	☐	On Demand only		

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Complete Catalog Description:
PHY 591 Computation and Data Analysis in Physical Sciences
Prerequisite: MTH 302
Computational techniques related to physical sciences including techniques used for data analysis. An exploration of scientific operating systems, programs used for analysis and simulations, and methods for analyzing data and producing simulations. May be taught concurrently with PHY 692. May only receive credit for one of PHY 591 or PHY 692. 3(3-0) F.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 0
Typically offered: Fall (odd-numbered years only)

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

Attached

Purpose of Course

This is a part of the program enhancement in computational technique course offerings in the department. This class will provide an advanced overview of computing for the physical sciences. It will include an overview of operating systems, commonly used packaged programs, scientific scripting for problem solving, computational techniques for analyzing and simulating data, numerical approximations and the basics of programming for experimental data acquisition, computer modelling, and data analysis in physical sciences.

Relationship to Other Departments

None

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

New Course Resource Information

Anticipated Average Enrollment per section:	10	Maximum Enrollment Limit per section:	15
Anticipated Average Enrollment per semester:	10	Maximum Enrollment Limit per semester:	15
Anticipated Average Enrollment per year:	10	Maximum Enrollment Limit per year:	15
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ◉ No ○ Yes

What will this course require in the way of:

Additional library Holdings

None

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Additional computer resources

None

Additional or remodeled facilities

None

Additional equipment or supplies

None

Additional travel funds

None

Additional faculty; general vs specialized

None

Additional faculty; regular vs per-course

None

Other additional expenses

None

If additional faculty are not required, how will faculty be made available to teach this course?

None

List names of current faculty qualified and available to teach this course

Drs. Ridwan Sakidja, Evan Frodermann, Mike Reed, David Cornelison

What is the anticipated source of students for this course?

Physics, Chemistry, Mathematics, Geography, Geology, and Computer Science

If from within the department, will students be taking this course in addition to or in place of other courses?

This is an optional course

If from outside the department, which courses in other departments would most likely be affected?)

This is an optional course

Other comments:

None

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 02/14/2018

Current Status:

College Council Review

Proposal Progress:

02/27/2018 - Submitted by Department Head (David Cornelison)

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Review Comments:

No comments have been added to this proposal.

[redacted]

MAKE YOUR MENT.

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Course number and Title: PHY 591: Computational Methods and Data Analysis in Physical Sciences
Instructor Name: Dr. X.
Professor, Department of Physics, Astronomy, and Materials Science
Office location: Kemper 10X
Phone Number: (417) 836-5131
E-mail: X@missouristate.edu
Office hours: To be set.
Web Page: X.missouristate.edu

Purpose: This class will provide an advanced overview of computing for the physical sciences. It will include an overview of operating systems, commonly used packaged programs (Matlab, Mathematica, gnuplot, Labview, etc.), scientific scripting for problem solving, computational techniques for analyzing (c^2, least-squares, Fourier, etc.) and simulating (Monte Carlo, Poisson distribution, etc.) data, numerical approximations and the basics of programming for experimental data acquisition, computer modelling, and data analysis in physical sciences.

Course design: The course will include the following sections:
1) History and overview of scientific usage of operating systems.
2) Working environments. Commonly used programs for analyzing and/or simulating data, interfacing with equipment, and producing results (graphics)
3) Data analysis.
4) Computational problem solving techniques.

Grading: Grading will be based on the completion of projects and homeworks.

Usual notices would be placed below this.

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Missouri State

Curricular Action Workflow

designed by Computer Services

New Course Proposal Form

Submitted on 02/22/2018 by Kartik Ghosh (Kartikghosh@missouristate.edu).

***All fields require input**

◉ New COURSE

○ New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: MAT

Course Number: (Check Availability) 514

Course Title: Techniques in Electron Microscopy

Will this course become part of a program? ○ No ○ Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? ○ No ○ Yes

Will this proposal need to be reviewed by EPPC? ◉ No ○ Yes

Prerequisite/Co-requisite or enter 'None': None

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability, UG/GR parallel course, etc.)

An introduction to techniques in electron microscopy with a primary emphasis on scanning electron microscopy and X-ray microanalysis. Theoretical background and experimental procedures involve both techniques but the major focus will be on obtaining secondary electron images. Additional coverage will include sample preparation, back-scattered electron imaging, X-ray mapping, and related image processing techniques. This course will be taught concurrently with MAT 514. Cannot receive credit for both MAT 514 and MAT 614.

Credit Hours: 2 | Lecture Contact Hours: 1 | Lab Contact Hours: 2

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

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Periodicity. Check all that apply.

☐	Fall	☑	Fall (even-numbered years only)	☐	Fall (odd-numbered years only)
☐	Spring	☐	Spring (even-numbered years only)	☐	Spring (odd-numbered years only)
☐	Summer	☐	On Demand only		

Complete Catalog Description:
MAT 514 Techniques in Electron Microscopy
Prerequisite: None
An introduction to techniques in electron microscopy with a primary emphasis on scanning electron microscopy and X-ray microanalysis. Theoretical background and experimental procedures involve both techniques but the major focus will be on obtaining secondary electron images. Additional coverage will include sample preparation, back-scattered electron imaging, X-ray mapping, and related image processing techniques. This course will be taught concurrently with MAT 514. Cannot receive credit for both MAT 514 and MAT 614.
Credit hours: 2 Lecture contact hours: 1 Lab contact hours: 2
Typically offered: Fall (even-numbered years only)

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

Attached

Purpose of Course

To provide knowledge on a theoretical background and a wide range of practical applications of electron microscopy.

Relationship to Other Departments

None

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

New Course Resource Information

Anticipated Average Enrollment per section:	10	Maximum Enrollment Limit per section:	12
Anticipated Average Enrollment per semester:	10	Maximum Enrollment Limit per semester:	12
Anticipated Average Enrollment per year:	10	Maximum Enrollment Limit per year:	12
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ◉ No ○ Yes

What will this course require in the way of:

Additional library Holdings

None

Additional computer resources

None

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Additional or remodeled facilities

none

Additional equipment or supplies

None

Additional travel funds

None

Additional faculty; general vs specialized

None

Additional faculty; regular vs per-course

None

Other additional expenses

None

If additional faculty are not required, how will faculty be made available to teach this course?

None

List names of current faculty qualified and available to teach this course

Ridwan Sakidja, Kartik Ghosh, Robert Mayanovic

What is the anticipated source of students for this course?

Physics, Chemistry, Biology, and Biomedical Science

If from within the department, will students be taking this course in addition to or in place of other courses?

Optional Course

If from outside the department, which courses in other departments would most likely be affected?)

Optional Course

Other comments:

None

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 02/14/2018

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

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Proposed New Course: MAT514-Techniques in Electron Microscopy
Textbook:

Scanning Electron Microscopy and X-Ray Microanalysis (Third Edition) 2003, by Joseph Goldstein, Dale E. Newbury, David C. Joy, Charles E. Lyman, Patrick Echlin, Eric Lifshin, Linda Sawyer and Joseph Michael. Plenum Press, 689 pp + CD. Hardback.

Description:

The purpose of this course is to provide the theoretical background to permit the practical use of the scanning electron microscope (SEM) for scientific research. The students will be given opportunities to learn to prepare samples correctly for SEM, to operate the SEM and to collect data and perform analysis on the samples. The data collected will include secondary-electron and back-scattered electron images, X-ray mapping and EDS spectra. The course will have 1 hr of lecture and 1 hr of lab per week. The lecture will cover theoretical backgrounds on and relevant computer simulations to the electron microscopy.

Proposed syllabus:

1. Historical background of electron microscopy and SEM
2. Electron-specimen interactions and MC simulations
3. Background on Electron-optical Column
4. Introductory to Vacuum
5. Image Acquisition (includes low voltage)
6. Variable Pressure ("Environmental") SEM work
7. Introductory to EDS Analysis
8. Quantification method: ZAF Matrix Corrections
9. Specimen preparation, coating
10. SEM for nanoparticles and inclusions
11. SEM for cross-sectioned areas
12. SEM for topologies/morphologies
13. NIH Image Analysis