

Curricular Action Workflow



Missouri State / Computer Services - MIS / Curricular Action Workflow / **CAW - Change Course Proposal Form**

Change Course Proposal Form

Submitted on 09/18/2020 by Gary Michelfelder (GaryMichelfelder@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:

GLG332 Mineralogy

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

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

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

Current online catalog description:

GLG 332 Mineralogy

Prerequisite: GLG 110 or both GLG 171 and GLG 172; and CHM 160; and MTH 135 or MTH 138 or MTH 261 or MTH 287. Origin, classification, description, and identification of ore minerals and rock-forming minerals. 3(2-2) 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.)

↶ ↷ **B** *I* 🔗

GLG 332 Mineralogy

Prerequisite: GLG 110 or both GLG 171 and GLG 172; and CHM 160; and MTH ~~135~~ **136 or higher** ~~or MTH 138 or MTH 261 or MTH 287~~. Origin, classification, description, and identification of ore minerals and rock-forming minerals. 3(2-2) F

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- | | | | |
|---|--|--------------------------------------|--|
| <input type="checkbox"/> Course Code | <input type="checkbox"/> Course Number (<u>Check Availability</u>) | <input type="checkbox"/> Title | <input checked="" type="checkbox"/> Prerequisite |
| <input type="checkbox"/> Credit Hours/Contact Hours | <input type="checkbox"/> Periodicity | <input type="checkbox"/> Description | |

Reason for proposed change

Updated courses offered by the Mathematics Department. MTH 135 is no longer offered, MTH 136 has replaced this course.

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

Explain.

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

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Routine or annual review/assessment of curriculum | <input type="checkbox"/> Faculty Input | <input type="checkbox"/> Student Input |
| <input type="checkbox"/> Accreditation/certification compliance | <input checked="" type="checkbox"/> Review of catalog information | |
| <input type="checkbox"/> 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)

09/18/2020

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.

No review notes have been added.

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MAKE YOUR COURSE CHANGE STATEMENT.

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Curricular Action Workflow



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Change Course Proposal Form

Submitted on 09/18/2020 by Gary Michelfelder (GaryMichelfelder@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:

GLG333 Igneous and Metamorphic Petrology

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

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

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

Current online catalog description:

GLG 333 Igneous and Metamorphic Petrology

Prerequisite: GLG 332. Origin, classification, and identification of common igneous and metamorphic rocks. A grade of "C" or better is required in this course in order to take GLG 413. Cannot be taken Pass/Not Pass. 3(1-4) 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.)

↶ ↷ **B** *I* S

GLG 333 Igneous and Metamorphic Petrology

Prerequisite: GLG 332. Origin, classification, and identification of common igneous and metamorphic rocks. **Field trip required.** A grade of "C" or better is required in this course in order to take GLG 413. Cannot be taken Pass/Not Pass. 3~~(1-4)~~**(2-2)** S

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- | | | | |
|--|--|---|---------------------------------------|
| <input type="checkbox"/> Course Code | <input type="checkbox"/> Course Number (<u>Check Availability</u>) | <input type="checkbox"/> Title | <input type="checkbox"/> Prerequisite |
| <input checked="" type="checkbox"/> Credit Hours/Contact Hours | <input type="checkbox"/> Periodicity | <input checked="" type="checkbox"/> Description | |

Reason for proposed change

Student input in the the required pace of the lecture with only one 50-minute lecture per week and the use of hybrid teaching. Students have suggested adding one more lecture hour per week to the course.

Description change add the requirement of a field trip to the course, which to this point have been optional.

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

Explain.

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

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Routine or annual review/assessment of curriculum | <input type="checkbox"/> Faculty Input | <input checked="" type="checkbox"/> Student Input |
| <input type="checkbox"/> Accreditation/certification compliance | <input checked="" type="checkbox"/> Review of catalog information | |
| <input type="checkbox"/> 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)

09/18/2020

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.

No review notes have been added.

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Curricular Action Workflow



Missouri State / Computer Services - MIS / Curricular Action Workflow / **CAW - New Course Proposal Form**

New Course Proposal Form

Submitted on 09/02/2020 by Damon Bassett (DBassett@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:

GLG

Course Number: ([Check Availability](#))

615

Course Title:

Invertebrate Paleontology

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.)

Morphology and taxonomy of invertebrate fossils.

48/30000 character limit.

Credit Hours:

4 ▾

Lecture Contact Hours:

2 ▾

Lab Contact Hours:

4 ▾

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

Complete Catalog Description:

GLG 615 Invertebrate Paleontology

Prerequisite: None

Morphology and taxonomy of invertebrate fossils.

Credit hours: 4 Lecture contact hours: 2 Lab contact hours: 4

Typically offered: Spring, Spring (odd-numbered years only)

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

0/30000 character limit.

Attached [View Attachment](#)

Purpose of Course

The primary goals of this course are to survey the invertebrate groups most important in the fossil record and to discuss insights gained from, as well as the limitations of the fossil record. The course is organized around taxonomic groups and will progress from single celled organisms through the major invertebrate phyla that have hard parts (most likely to be preserved in rocks).

385/30000 character limit.

Relationship to Other Departments

None

4/30000 character limit.

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

Enter parallel course number

GLG415 Invertebrate Paleontology

How do these classes differ?

GLG 615 students will be required to lead some class discussions during the semester and will have longer requirements for their final paper and presentations.

159/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:

Maximum Enrollment Limit per section:

Anticipated Average Enrollment per semester:

Maximum Enrollment Limit per semester:

Anticipated Average Enrollment per year:

Maximum Enrollment Limit per year:

Faculty Load Assignment (equated hours):

Is another course being deleted? No Yes

Select course number and title being deleted.

What will this course require in the way of:

Additional library Holdings

None.

5/30000 character limit.

Additional computer resources

None.

5/30000 character limit.

Additional or remodeled facilities

None.

5/30000 character limit.

Additional equipment or supplies

None.

5/30000 character limit.

Additional travel funds

None.

5/30000 character limit.

Additional faculty; general vs specialized

None.

5/30000 character limit.

Additional faculty; regular vs per-course

None.

5/30000 character limit.

Other additional expenses

None.

5/30000 character limit.

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

The instructor already assigned to GLG 415 will be responsible for teaching GLG 615.

84/30000 character limit.

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

Damon Bassett

13/30000 character limit.

What is the anticipated source of students for this course?

Students will come from the GGP graduate student population. It is possible graduate students from related programs would be interested as well.

144/30000 character limit.

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

Students from within the department will take this in addition to other graduate level courses.

95/30000 character limit.

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

None.

5/30000 character limit.

Other comments:

NONE.

5/30000 character limit.

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

01/24/2020

Current Status:

Grad Council Review

Proposal Progress:

09/02/2020 - Submitted by Department Head (Toby Dogwiler)

09/08/2020 - Reviewed by Dean (Tamera Jahnke)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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GEOLOGY 615: Invertebrate Paleontology

TEM 335

Damon Bassett
phone: 836-4897
Office Hours:

office: TEM 352
e-mail: dbassett@missouristate.edu
or by appointment

Text: *Bringing Fossils to Life* (Prothero, 3rd edition)

Overview:

The history of life on earth is recorded by fossils, and the fossil record provides the only direct evidence of evolutionary change on relevant time scales. The fossil record is the Earth's "memory" of how life has evolved through time. Unfortunately, the recording, much like real memories, is imperfect and mostly contains snapshots of instances in time that we must learn to splice together. What we will learn is that the majority of individuals within a species are not preserved and commonly those that are preserved are not complete. There is still a multitude of information contained within the fossil record and using the right techniques we can recreate not only the individual, but the environment in which it lived.

The primary goals of this course are to survey the groups most important in the fossil record and to discuss insights gained from, as well as the limitations of the fossil record. The course is organized around taxonomic groups and will progress from single celled organisms through the major invertebrate phyla that have hard parts (those most likely to be preserved in rocks).

Lectures will address major taxa (morphology, ecology, and biostratigraphy, and geographic ranges) and concepts (e.g., taphonomy/fossilization, paleoecology, paleoclimatology, and evolution/extinction). Laboratory exercises will provide hands on experience with different fossil groups and allow further exploration of concepts.

Goals:

- survey taxonomic groups important in the fossil record
- become familiar with the history and diversity of life through time
- explore the processes that cause changes in life through time
- understand how geological processes illuminate, but also bias our view of the past

Grades: Your final score will be calculated based on 600 total points.

Lecture (400 pts.): There will be three hour exams each worth 100 points. The exams will not be comprehensive *per se*, but many topics (e.g., evolution) have broad relevance and may figure in questions on more than one exam. The exams will cover material discussed in class. You will not be held responsible for terminology in the text that is not covered in lecture or lab (there will be plenty of terminology already).

In lieu of a final exam there will be a final presentation and paper worth 40 and 60 points, respectively. Each graduate student will investigate a subject related to the material covered during the semester and make a presentation to the class and turn in an original, fully referenced, 10-12 page term paper. Graduate students will also give a 20 minute presentation. We'll talk more about the details later in the semester.

Lab (200 pts.): The lab accounts for 1/3 of the final grade, so it will be an important part of your grade. Lab grades will be based on lab quizzes and lab write-ups. We will go over details in lab.

Grading: Summary of Points Possible: There are 600 points possible in this course, distributed as:

(3) Lecture Examinations	300 points
(1) Final Paper	60 points
(1) Final Presentation	40 points
(5) Lab Assignments	100 points
(2) Lab Quizzes/Attendance/Participation	100 points
TOTAL	600 points

Grading Scale:	A = 100 - 92.50%	A- = 92.49 - 90.00%
B+ = 89.99 - 87.50%	B = 87.49 – 82.50%	B- = 82.49 - 80.00%
C+ = 79.99 - 77.50%	C = 77.49 - 72.50%	C- = 72.49 - 70.00%
D+ = 69.99 - 67.50%	D = 67.49 – 60.00%	
	F = 59.99 – 0.00%	

Tentative class schedule: *reading assignments should be completed before lecture

week of	TAXA, TOPICS	READING*
Jan. 14	<i>introduction, history of paleontology</i>	Ch. 1
Jan. 21	<i>fossilization, taphonomy, and traces</i>	Ch. 1, 19
Jan. 28	<i>paleoecology, protists and porifera</i>	Ch. 8, 12
Feb. 4	<i>paleoecology (cont'd), cnideria and bryozoa</i>	Ch. 8, 13, & 14
Feb. 11	<i>reefs, systematics</i> Exam 1- Thursday 2/14	Ch. 4
Feb. 18	<i>species and variation, brachiopods</i>	Ch. 2, 14
Feb. 25	<i>evolution and speciation, arthropods</i>	Ch. 3, 15
Mar. 4	<i>evolution (cont'd)</i>	Ch. 5
Mar. 11	<i>SPRING BREAK</i>	
Mar. 18	<i>early earth</i>	Ch. 11
Mar. 25	<i>functional morphology, molluscs (gastropods)</i> Exam 2- Thursday 3/28	Ch. 7, 16
Apr. 1	<i>functional morphology (cont'd), molluscs (bivalves)</i>	Ch. 7, 16
Apr. 8	<i>biostratigraphy, molluscs (cephalopods)</i> (no class on 4/11 – Spring Holiday)	Ch. 10, 16
Apr. 15	<i>biogeography, echinoderms, graptolites, and basal verts.</i>	Ch. 9, 17, 18
Apr. 22	<i>diversity, mass extinctions</i>	Ch. 6
Apr. 29	<i>vertebrates & plants et al.</i> Exam 3, Thursday 5/2	Ch. 18, 20
May 6	<i>Presentations</i>	
	Final Exam Period; Tue. May 14, 11:00 am-1:00 pm	

Lab Syllabus

Attendance Policy: Attendance is essential to learning the lab material presented. 10 points will be allotted for attendance.

Grading Policy: The laboratory will constitute 1/3 of your total class grade. There will be two lab exams each worth 40 pts and one lab quiz worth 10 pts. In addition, there will be five homework write-ups* worth 20 pts each.

5 homework write-ups	100 pts
Attendance	20 pts
<u>8 lab quizzes</u>	<u>80 pts</u>
Total	200 pts

Make-up Work: Students who cannot attend lab during the specified time, may, for a **valid** reason, be entitled to a make-up assignment (including exams, quizzes, and write-ups). To qualify for a make-up assignment a student must notify me personally **prior** to the scheduled lab assignment, and be prepared to present documentation of the emergency or illness. In the case of an emergency you should contact me as soon as reasonably possible. Unexcused absence from a laboratory assignment will result in a score of zero for that assignment.

Tentative lab schedule:

Date	TOPIC	READING
Jan. 14	No Lab	
*Jan. 21	preservation and ichnofossils	Ch. 1, 20
Jan. 28	protists and porifera	Ch. 12 & 13
Feb. 4	cnidaria and bryozoa	Ch. 13 & 14
Feb. 11	TBA	
*Feb. 18	brachiopods	Ch. 15
Feb. 25	arthropods	Ch. 15
*Mar. 4	evolution game	
Mar. 11	SPRING BREAK	
Mar. 18	molluscs (bivalves)	Ch. 16
Mar. 25	molluscs (gastropods)	Ch. 16
Apr. 1	molluscs (cephalopods)	Ch. 16
*Apr. 8	graphic correlation (No class 4/11 – Spring Holiday)	
Apr. 15	echinoderms	Ch. 17
*Apr. 22	sampling	Ch. 10
Apr. 29	conodonts, graptolites, et al.	Ch. 18
May 6		

* labs for which there will be a write-up to turn in

Laboratory Objectives: The primary purpose of the laboratory exercises is to provide practical experience and knowledge related to the lecture material. Lab will provide a chance for hands on interaction with fossils in an attempt to better understand taxonomy and morphology.

Absence and Tardiness Policies: Success in this course, as with any other, is heavily dependent on regular attendance and attendance will be taken regularly. The university places responsibility for attendance policies in the hands of instructors. Tardiness disrupts the class, as does leaving early.

Drop Policy: 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.

Last day to Drop or Withdraw is

Academic Integrity: 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, Student Academic Integrity Policies and Procedures, available at www.missouristate.edu/policy/academicintegritystudents.htm and also available at the Reserves Desk in Meyer Library. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

Use of Cell Phones, Pagers and Text-Messaging 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 or pagers 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, PDAs, 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.

Audio and Video Recording: Students must request permission from the instructor before making any audio or video recordings of course activity. However, the redistribution of audio or video recordings from the course to individuals who are not students in the class is prohibited without the express permission of the faculty member and any of the students who are recorded.

Accommodating Students: To request academic accommodations for a disability, contact the Director of the Disability Resource Center, Plaster Student Union, Suite 405, (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, (417) 836-4787, <http://psychology.missouristate.edu/lcd>.

Nondiscrimination Statement: 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 Equity and Diversity, Park Central Office Building, 117 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 OED website at www.missouristate.edu/equity/.

Curricular Action Workflow



Missouri State / Computer Services - MIS / Curricular Action Workflow / **CAW - New Program Proposal Form**

New Program Proposal Form

Submitted on 08/26/2020 by Kevin Mickus (Kevinmickus@missouristate.edu).

This form is to be used for internal Missouri State approval of any proposal for a new program involving two or more courses, including any new graduate program, new undergraduate major (whether comprehensive or non-comprehensive), new option within an existing program (whether graduate or undergraduate), new minor, new certificate, or new certification program.

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.

Department:

Geography, Geology, & Planning

Proposed Program Title:

Graduate-Applied Geophysics

Choose One:

- | | |
|---|--|
| <input type="radio"/> Non-Comprehensive Undergraduate Major | <input type="radio"/> Option |
| <input type="radio"/> Comprehensive Undergraduate Major | <input type="radio"/> Minor |
| <input type="radio"/> Graduate Program | <input checked="" type="radio"/> Certificate |

(Note: If the option you need is not listed above contact curriculum@missouristate.edu)

Does this program include any new courses?

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

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

GRCT - Graduate Certificate

General Education Courses Required:

none

Total Hours: 0

General Education Courses Recommended:

none

Total Hours: 0

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

Must take GLG 691 and GLG 690 and take two of the following: GLG 674; GLG 673; GLG 794; MTH 607; MTH 648; PHY 692; MAT 792. Admission is open to all with a Bachelor's degree from a college or university accredited by agencies recognized by Missouri State University

Total Hours: 12

Courses Required in Department:

GLG 690 and GLG 691

Total Hours: 6

Courses Required in Other Departments:

None

Total Hours: 0

Prerequisites for Required Courses:

GLG 340; and either PHY 124 or PHY 204; and either MTH 280 or MTH 288, or permission of instructor

Recommended Electives in Department:

GLG 794; GLG 674; GLG 673

Total Hours: 7

Recommended Electives in Other Departments:

MTH 607; MTH 648; PHY 692; MAT 792

Total Hours: 6

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)

1. Statement of Rationale: *Attached* [View Attachment](#)
2. Estimated costs for first five years: *Attached* [View Attachment](#)
3. Complete catalog description (including new courses and course changes pending approval): *Attached* [View Attachment](#)
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)

05/08/2020

Current Status:

Grad Council Review

Proposal Progress:

08/27/2020 - Submitted by Department Head (Toby Dogwiler)

08/28/2020 - Reviewed by Dean (Tamera Jahnke)

Review Comments:

08/27/2020 - Department Head Review - Toby Dogwiler - This is a resubmit to address issues brought up the Graduate Faculty Screening Committee at their meeting on 8/26/2020.

No review notes have been added.

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Graduate Certificate-Applied Geophysics

Geography, Geology and Planning Geophysics Certificate

12 cr

Take these two classes

3 cr- GLG 690 Applied Geophysics

3 cr- GLG 691 Seismic Data Processing

6 cr- Take two of the following classes

GLG 674- Petroleum Geology; GLG 673-Engineering Geology; GLG 794-Global Tectonics

MTH 607-Introduction to Partial Differential Equations; MTH 648-Applied Time Series Analysis

PHY 692-Computational Methods and Data Analysis in Physical Sciences; MAT 792-Introduction to Computational Material Sciences

1. Rational-Geophysics is one of most commonly used methods in applied Earth Sciences in studying the Interior of the Earth. Seismic, electrical, gravity and magnetic methods are used in petroleum, mining, water and environmental exploration studies. The above courses will be taken by our students to broaden their educational and employment opportunities and by local environmental company personnel to increase their knowledge of using geophysical methods in their jobs.

2. The courses required and recommended for the Applied Geophysics certificate are already offered by the GGP, Physics and Math Departments. There are no new costs for this certificate.

3. Catalog Description

This certificate is offered by the Geography, Geology and Planning Department. The certificate provides the coursework to broaden the student's background of geophysics both the applied and theoretical portions of geophysics. The courses provide the student with the background to apply geophysics to petroleum, mining, and environmental problems and to obtain the background to pursue advance geophysics at the graduate level.

4. Admission Criteria

Graduate Applied Geophysics Certificate program is open to all with a Bachelor's degree from a college or university accredited by agencies recognized by Missouri State University

5. Completion Requirements

Students must take a minimum of four courses, two which are required and two from the elective list. The students must have an average cumulative grade point average of 3.00 or better in these courses to receive the certificate. Students must satisfy all prerequisites for any courses they take in the program or they must obtain instructor approval to waive any prerequisites.

Graduate Certificate-Applied Geophysics

The courses required and recommended for the Graduate Applied Geophysics certificate are already offered by the GGP, Physics, Astronomy and Material Sciences, and Math Departments. There are no new costs for this certificate.

Graduate Certificate-Applied Geophysics- Catalog Description

The courses required and recommended for the Graduate Applied Geophysics certificate are already offered by the GGP, Physics, Astronomy and Material Sciences, and Math Departments. There are no new costs for this certificate.

Graduate-Applied Geophysics

This certificate provides a program for students and professionals who desire knowledge of the methods and theories of applying geophysical techniques to the study of Earth systems.

Program requirements (12 hours)

- A. **GLG 690(3), 691(3)**
- B. Select two of the following: **GLG 673(3), 674(3); GLG 794(4); MTH 607(3), 648(3); PHY 692(3), MAT 792(3)**
- C. All candidates must satisfy the **General University Certificate Requirements**.

Note: Students completing a major other than Geology may request a waiver of the GLG 340 prerequisite requirement for GLG 690 and GLG 691