Missouri State

Curricular Action Workflow

Delete Course Proposal Form

Submitted on 10/19/2020 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:

BIO215 Introduction to the Diversity of Life

Is this course a requirement or course choice within any current program, including those outside your department?

- ( ) No
- ( ) Yes (A corresponding program change course form must be submitted to remove the deleted course from the program requirements. You should also notify other departments using this course of your plans to delete the course.)

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

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

Online catalog description.

Prerequisite: 4 hours of biology. Introduction to the diversity in structure and function of protists, fungi, plants and animals. This course is designed for BSEd students and does not count toward a BA or BS in Biology. 2(1-3) D

Reason for proposed Deletion

The instructor who taught this course retired, and the course will no longer be offered. Instead we are submitting a proposal for a new course, which is to be taught by a new faculty member.

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

- [x] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [x] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [ ] Other (be specific):

What is the date that this course change was approved by departmental or program faculty? 10/02/2020

Current Status:

College Council Review

Proposal Progress:

10/19/2020 - Submitted by Department Head (S Mathis)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

Missouri State

Curricular Action Workflow

designed by Computer Ser

New Course Proposal Form

Submitted on 10/15/2020 by Avery Russell (AveryRussell@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: BIO

Course Number: (Check Availability) 504

Course Title: Plant-Animal Interactions

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': Bio 367 and 368 or Bio 436

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability,

UG/GR parallel course, etc.)

The theories, evolutionary and ecological patterns, and major current topics in plant-animal interactions. This course encourages independence in learning, synthesizing, and communicating science via discussions and presentations. Topics are flexible and guided by student interests. May be taught concurrently with BIO 604. Cannot receive credit for both BIO 504 and BIO 604.

376/30000 character limit.

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)
- [x] Spring
- [ ] Spring (even-numbered years only)
- [ ] Spring (odd-numbered years only)
- [ ] Summer
- [ ] On Demand only

Complete Catalog Description:
BIO 504 Plant-Animal Interactions
Prerequisite: Bio 367 and 368 or Bio 436
The theories, evolutionary and ecological patterns, and major current topics in plant-animal interactions. This course encourages independence in learning, synthesizing, and communicating science via discussions and presentations. Topics are flexible and guided by student interests. May be taught concurrently with BIO 604. Cannot receive credit for both BIO 504 and BIO 604.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 0
Typically offered: Spring

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

BIO 504 Plant-Animal Interactions

Prerequisite: BIO 367 and 368 or BIO 436

The theories, evolutionary and ecological patterns, and major current topics in plant-animal interactions. This course encourages independence in learning, synthesizing, and communicating science via discussions and presentations. Topics are flexible and guided by student interests. May be taught concurrently with BIO 604. Cannot receive credit for both BIO 504 and BIO 604

452/30000 character limit.
Attached View Attachment

Purpose of Course

To provide advanced instruction in how to search for and synthesize scientific knowledge, construct and deliver presentations, and lead discussions on a diverse array of topics related to plant-pollinator interactions. A major goal of this course is teaching the role of underrepresented scientists in shaping topics in plant-pollinator interactions.

350/30000 character limit.

Relationship to Other Departments

This course may also be of interest to students in the Darr College of Agriculture (in particular, the departments of Plant Science, Animal Science and Natural Resources).

171/30000 character limit.

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

Enter parallel course number

BIO100 Biological Science for Educators

How do these classes differ?

BIO 604; The graduate parallel course involves more advanced and independent contributions. Graduate students are expected more actively direct discussions of weekly papers, by submitting discussion questions ahead of time and asking those questions class. Graduate students are expected to also practice giving constructive feedback on presentations by other students.

Ignore the parallel course number listed in the dropdown - the form would not allow me to submit without selecting a parallel course number, and BIO 604 obviously does not yet exist.

559/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:	30	Maximum Enrollment Limit per section:	40
Anticipated Average Enrollment per semester:	30	Maximum Enrollment Limit per semester:	40
Anticipated Average Enrollment per year:	30	Maximum Enrollment Limit per year:	40
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ○ No ◉ Yes

Select course number and title being deleted.

BIO215 Introduction to the Diversity of Life

What will this course require in the way of:

Additional library Holdings

None

4/30000 character limit.

Additional computer resources

None

4/30000 character limit.

Additional or remodeled facilities

None

4/30000 character limit.

Additional equipment or supplies

None

4/30000 character limit.

Additional travel funds

None

4/30000 character limit.

Additional faculty; general vs specialized

None

4/30000 character limit.

Additional faculty; regular vs per-course

None

4/30000 character limit.

Other additional expenses

None

4/30000 character limit.

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

This course will be taught by a new faculty member as part of his regular load. BIO is deleting another course from the catalog.

129/30000 character limit.

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

Dr. Avery Russell

17/30000 character limit.

What is the anticipated source of students for this course?

From Biology majors and possibly Agriculture majors

51/30000 character limit.

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

This course will be added as an additional option to fulfill requirements in two degree programs in Biology: the Wildlife and Fisheries Biology option and the Environmental Biology and Evolution option

202/30000 character limit.

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

None

4/30000 character limit.

Other comments:

None

4/30000 character limit.

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

10/02/2020

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.

Copy As New Proposal

Syllabus BIO 504/604

Plant-Animal Interactions (BIO 504/604)
M/W, 1:25pm – 2:40pm, Temple Hall 264

INSTRUCTOR

Dr. Avery Russell
Temple Hall 110, 607-220-4432, AveryRussell@MissouriState.edu

Office hours by appointment: feel free to text or call me 9-5pm, M-F. Due to Covid19, in-person office hours should be a last resort and are Thursday, 9:30 - 2:30pm; sanitizer, masks, and snacks-to-go are available.

COURSE DESCRIPTION

This course will focus on the theories, evolutionary and ecological patterns, and many of the major topics in plant-animal interactions. Rather than lectures and exams, this course emphasizes student-led discussions, interactive presentations, primary literature, and participation. As such, you will guide the direction of this course. Examples of the many possible topics that may be covered in this course include tactics of plant-herbivore interactions, coevolution, plant carnivory, tritrophic interactions, pollination specialization, and more. Choosing frontier topics in plant-animal interactions related to your current or future research is encouraged. A substantial portion of your time will be spent reading primary literature. Your grade will be based on presentations, class participation, and completion of short writing assignments. Your independence in learning, synthesizing, and communicating material will be evaluated.

LEARNING OUTCOMES

1. Students will be able to read and evaluate scientific papers efficiently, both within the context of the individual study and the greater theme introduced in each class.

2. Students will be able to articulate questions about the papers being read, both via written and oral communication.

3. Students will be able to discuss, be skeptical of, criticize, and defend scientific papers with other scientists.

4. Students will be able to acquire and synthesize material from a variety of studies.

5. Students will be able to design and give oral presentations on theories and principles central to plant-animal interactions.

6. Students will be able to identify general evolutionary and ecological patterns of plant-animal interactions and their importance to diverse fields of study.

Syllabus BIO 504/604

ASSESSMENT OF LEARNING

BIO 597 Grade %	BIO 697 Grade %	Category	Description
20%	10%	Reading Responses	Each week will have assigned readings. I will post a series of questions to be answered **before the class for which the reading was assigned**. See Reading Response Framework for more detail. Reading Responses are expected to be turned in on time, but there are no late penalties.
30%	30%	Presentations	Each student is expected to give at least one presentation (PowerPoint-assisted lectures) during class. Depending on class enrollment, up to two students may present on the same topic. You may select presentation topics from a predetermined list or may propose your own. Presentations will be evaluated for completeness of coverage of the broad conceptual framework, clarity, and logical organization. See Presentation Framework for more detail.
20%	20%	Discussions	In consultation with me, presentation leaders choose one or two experimental research articles about the topic **one week in advance of the discussion**. I will upload them for the class to read in advance. You will lead the subsequent discussion of the assigned papers. See Discussion Framework for more detail.
30%	20%	Participation	All students are expected to participate in discussions by discussing and evaluating the assigned readings, as well as asking questions about the readings / presentation. If you need to miss a class, let me know either before or after the fact and the participation grade for it will be dropped. If you do not let me know, the participation grade will be a zero instead.
	10%	Presentation Feedback	For each presentation by other students, graduate students are expected to submit written constructive feedback on presentations to me, to be passed on to students.
	10%	Supplemental Discussion Questions	Graduate students email two Reading Response-style questions (with answers) to the instructor as a Word document prior to the relevant Discussion. Graduate student created questions can be specific to the reading or tie together lectures, but questions must be unique and should not be about recognizing or recalling facts. Reading Response questions. Graduate students must ask their Reading Response questions during Discussion, when the appropriate opportunity arises.

READING RESPONSE FRAMEWORK

These assignments are intended to guide your participation during discussion. This course focuses on developing skills to understand and describe broad concepts, debates, and patterns in plant-animal interactions. While a detailed understanding of a given study's design will not be

necessary, the student will require some level of understanding to assess whether the study properly addresses the theme being discussed.

When emailing your typed assignment in Word, clearly indicate which study is being evaluated via a header composed of the author name(s), publication year, article title, and journal name. These are key elements that scientists use to communicate about science. **Reading Responses are due via Word document through email the day that the studies are to be discussed**. All students, **including presenters**, turn in Reading Responses each week. Assignments are limited to one page per empirical study (no Reading Response is required for review articles) and are not intended to be exhaustive.

The following questions should be answered each week for each assigned empirical (non-review) article. **On occasion, I may send out a list of alternate questions, which will substitute for the regular assignment**. Be prepared to discuss the questions during discussion.

Regular Questions:

- Briefly describe the conceptual framework underlying this study.

- Briefly describe why or why you did not find the study to be a convincing test of the broad concept underlying the study. This could also extend to addressing whether you found the concept - as introduced by the authors - tenable.

- Did you find a methodological flaw(s) in this study that impacts a key result? Describe it/them briefly.

- Briefly describe one future direction that might/should be taken with the work described in the paper.

- Did the study leave you with any questions? Briefly describe two such questions. While these could be about methodology, they could also be about the conceptual framework or the conclusions the study made.

PRESENTATION FRAMEWORK

I encourage students to discuss their presentations with me at least a week prior to their presentation day. For each student's presentation I will provide review paper(s) and a broad outline to serve as a guide for developing the presentation. **The presentation is due as a PowerPoint in the shared Dropbox the day that the presentation is to be given.**

Assuming one student per presentation topic, your presentation should have approximately 40 minutes of material, with class participation filling the rest of the time (leave ample time for questions and discussion during your presentation). Halve this if there are two students per presentation topic. During presentations, you should ask questions and seek audience participation. If you are not presenting, endeavor to ask questions during the presentation and participate in the discussion that follows.

Syllabus BIO 504/604

In general, your presentation should begin with an introduction of the overall topic and an outline of the topics that will be covered. Major controversies and conclusions in the field as pertain to the topic should be covered. It will be necessary to read many more papers than have been assigned for the discussion to make a thorough and professional presentation.

DON'T PAY FOR ARTICLES: you can use https://libraries.missouristate.edu/ or request an article through https://libweb.missouristate.edu/ill/logon.htm. It will be **impossible** to cover all material relevant to a given presentation topic, so focus on covering broad themes and briefly discuss appropriate case studies. When crafting your presentation, include not only the "classic" literature, but the contemporary and foundational work of minoritized researchers (i.e., non-white, non-male perspectives). Come prepared to speak on brief generalities about the professional careers of at least two focal minoritized scientists (e.g., other notable scholarly and service contributions, main themes of research). Employ active learning approaches (e.g., think-pair-share, one-minute papers, class games).

While not required, I encourage using an assertion-evidence framework for these lecture-style presentations: http://www.assertion-evidence.com/

Presenters should follow good presenting guidelines: slides are to serve as a visual aid (text should be restricted to essential information) and not a crutch for insufficient preparation. However, I understand that this material may be novel to the presenter and that they may require notes to properly cover the subject: this will be taken into consideration.

DISCUSSION FRAMEWORK

There are many ways to lead a successful discussion. I suggest that the discussion leader use the Reading Responses as a guide. Begin by refreshing the discussion group's memory with a brief summary of the study and what lines of evidence they use to support it. Ask questions related to the conceptual framework, the general methods, future directions, and unclear areas to help guide the discussion when needed. **Awkward silences are ok.** Avoid quizzing people on specific knowledge, but guide the discussion to focus on how this study relates to the broader concepts of plant-animal interactions that you introduced in the presentation, active areas of study, and gaps in knowledge. It is often beneficial to bring in conceptual themes from your lecture or even previous lectures. **Best yet is to bring pre-prepared questions for when participation from your audience wanes.**

COURSE MATERIALS

There is no textbook for this course. The required readings are all scientific articles, which will be available as PDF files in the course OneDrive. These articles will form the basis for our discussion sections and accompanying presentation. You are required to read the assigned reading before class. All class materials will be uploaded to the class OneDrive.

DIVERSITY AND INCLUSION

In this classroom we will all work to create an inclusive learning environment in which diverse perspectives and people are respected, recognized and fostered. Individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability, and other visible and nonvisible differences are

welcome. **If you feel comfortable doing so, please advise your instructor of your name and pronouns so that I may address you correctly.**

Historically, the privileged have controlled access to science, and moreover, the scientific contributions of underrepresented groups have been (often intentionally) minimized. Diversity is an asset for science and learning and we will often discuss the contributions of minoritized scientists and, frequently, why that diversity was critical to pushing the field forward. We will additionally practice awareness of our language and use gender-inclusive language, and attempt to be aware of our implicit biases (e.g., we will actively seek out diverse resources, show respect for our colleagues and peers, and discuss scholars with due respect for their titles).

POLICY STATEMENTS

ATTENDANCE POLICY

Presence in class is expected: your participation is highly valued! If you need to miss a class, please let me know by email. **I will not penalize you for non-attendance if you give notice or if there was an unexpected emergency**; I drop the participation grade for that day, which weights your other grades more heavily. If you need to skip your presentation day, we can assign you to another presentation, if there is enough advanced notice.

GRADING POLICY

I do not take off points for late assignments. If you have to miss an assignment and cannot make it up, let me know and I can drop the assignment from your grade.

Letter grades are assigned based upon percentage of points earned:

A	93 - 100%
A-	90 - 92.9%
B+	87 - 89.9%
B	83- 86.9%
B-	80 - 82.9%
C+	77 - 79.9%
C	73- 76.9%
C-	70 - 72.9%
D+	67 - 69.9%
D	65- 66.9%
F	below 65%

ACADEMIC INTEGRITY

Missouri State University is committed to developing educated persons who practice personal and academic integrity. You are responsible for knowing and following the university's academic integrity policy, the "Student Academic Integrity Policies and Procedures" (available online at Academic Integrity Policies and Procedures (Students) and also at the Reserves Desk in Meyer Library). Participation in any form of academic dishonesty is subject to sanctions.

NONDISCRIMINATION POLICY

Syllabus BIO 504/604

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, 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 me and can also be brought to the attention of my Department Head. Please visit the OIEC website.

Missouri State University has a Title IX policy that guides our response to instances of sexual violence. Sexual Violence includes: Rape, Sexual Assault, Sexual Misconduct, Sexual Discrimination, Domestic Violence, Dating Violence, Stalking, Sexual Harassment and Pregnancy issues. The Title IX policy can be located on the MSU Title IX website. This website is also a good resource for any questions or issues involving Title IX and contains contact information for the MSU Title IX Office and staff. Read an overview of the Title IX office.

I am a "Responsible Employee", such that if an MSU student discloses a Title IX related issue to me, I am required to report such disclosure to the Title IX Coordinator.

ACCOMMODATIONS

If you have a disability and anticipate barriers related to this course, please contact the Disability Resource Center (DRC) at the Disability Resource Center website, Meyer Library, Suite 111, 417-836-4192, to request accommodations (MSU usually requires students provide documentation relating to their disability). Once an accommodation plan is established, please notify me of accommodations within the first two weeks of class, otherwise I will not receive the accommodation plan. Instructors are not required to apply accommodations retroactively.

Any student who faces challenges securing their food or housing or has childcare responsibilities and believes this may affect their performance in the course is urged to contact the Dean of Students for support and to look into filling out a request with Bear Pantry, which focuses on alleviating food insecurity. Please notify me if you are comfortable doing so. This will enable me to provide resources I may have. **Additionally, I always have snacks in my office for students.**

MENTAL HEALTH

A range of personal issues can impede learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. You can learn more about free (**8 sessions with a counselor per semester**) and confidential Missouri State University Counseling Center services available to assist you at counselingcenter.missouristate.edu.

I want to ensure your mental health, in addition to your academic success. We all have bad days, but if your bad day has led you to feel that there is no hope for better days, please take advantage of the suicide prevention resources below. I am not a professional counselor, but if you would like to talk to someone or want somebody to listen, MSU has professionals who can help, and I can assist you with making those contacts. https://www.missouristate.edu/policy/Op1_08-suicide-prevention-available-suicide-programs-and-related-procedures.htm.

Syllabus BIO 504/604

CELL PHONE POLICY

All students have a responsibility to each other to take efforts not to disrupt each other's learning. Therefore, please keep your cellphones in a silent (vibration) mode. You may use your cellphones to take notes and look up information if you do not have a laptop or notebook - but this privilege will be revoked if you are not acting in good faith.

FACE COVERING POLICY

In accord with the MSU Mask and Face Covering policy (https://www.missouristate.edu/Coronavirus/masking-policy.htm), Greene County Health Department (https://www.springfieldmo.gov/5140/Masks-and-Face-Coverings), and the Springfield City Ordinance (https://www.springfieldmo.gov/AgendaCenter/ViewFile/Item/14780?fileID=203417), masks must be worn at all times over the nose and mouth during seated class to reduce COVID-19 related health risks for everyone engaged in the educational process. This is in accordance with the Centers for Disease Control and Prevention (CDC) guidelines (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wear-cloth-face-coverings.html). Face shields are not considered masks or face coverings.

Students who cannot wear a mask or face covering due to a disability must contact the Disability Resource Center (DRC) (https://www.missouristate.edu/disability/) to initiate the interactive accommodation process. A student's refusal to wear a mask or face covering without accommodation will be considered a classroom disruption, consistent with Op3.04-11 Class Disruption, and may result in the student being administratively dropped from the class section.

MISSING CLASS IF YOU ARE SICK

Do not come to class if you are sick. Do seek medical attention from your doctor or at Mager's Health and Wellness Center. Contact me to let me know you are sick and will not be in class. Let me know what resources you need to succeed.

EMERGENCY RESPONSE STATEMENT

Talk with me to become familiar with a basic emergency response plan, exits specific to the classroom, and the location of building evacuation centers. Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with me. For more information, visit University Safety.

The racquetball courts are our shelter. Our emergency assembly point is North to McDonald Arena Gymnasium; Northwest to Meyer Library Main Entrance.

Syllabus BIO 504/604

LIST OF POTENTIAL TOPICS (and in parentheses, the potential sub-topics therein)

Tactics of plant-herbivore interactions [instructor-taught]	**Mimicry and camouflage** (in pollination, in herbivory, negative/positive freq. dep selection, perfect, perceptual)
Theory of herbivory [instructor-taught]	**Plant-animal interactions and climate change** (phenological mismatch, invasions, multigenerational herbivory)
Plant-herbivore coevolution (secondary metabolites, defenses, recognition, dead ends; ant-plant prostoma)	**Species invasions and biological control** (plants that attract/disperse, what makes good invasive, what facilitates invasion)
Tritrophic interactions (plant defense, ant-plant, animal use to invade plants)	**Paleoecology in plant-animal interactions** (what it is, how determine, major evolutionary transitions)
Alternative feeding (types [carnivory, coprophagy], why, evolutionary patterns, consequences for pollination)	**Species restoration and interactions** (interaction webs, heterogeneity, management of biodiversity, metapopulations, risks)
Microbial interactions (mediating tritrophic interactions, plant-plant competition, communication)	**Genetic engineering in agriculture** (how done, common targets, risks)
Angiosperm evolution (consequence of animal pollination, alternate hypotheses)	**Plant mating systems** (basics, patterns, why evolve, consequences for traits)
Pollination specialization (behavior, plant traits, pollination syndromes, reciprocal exploitation)	**Community consequences of herbivory** (nutrient availability, grazing, fire risk, multi-trophic)
Frugivory and seed dispersal by animals (ants and elaisomes, mammals and extinct megafauna, burs and devils claws, fruits as bird laxatives)	**Floral displays and rewards** (consumptive emasculation, nutrient tradeoffs, herbivory tradeoff, secondary metabolites in rewards)

Syllabus BIO 504/604

CLASS SCHEDULE

Syllabus BIO 504/604

Module Number	Date	Presentation/Discussion Topic	Reading Response Due?	Reading due?
1		Instructor-led lecture: Intro / Tactics of plant-herbivore interactions		
1		Instructor-led discussion		**Yes**
2		Instructor-led lecture: Theory of herbivory		
2		Instructor-led discussion	**Yes**	**Yes**
3		**Lecture - TBD**		
3		**Discussion - TBD**	**Yes**	**Yes**
4		**Lecture - TBD**		
4		**Discussion - TBD**	**Yes**	**Yes**
5		**Lecture - TBD**		
5		**Discussion - TBD**	**Yes**	**Yes**
6		**Lecture - TBD**		
6		**Discussion - TBD**	**Yes**	**Yes**
7		**Lecture - TBD**		
7		**Discussion - TBD**	**Yes**	**Yes**
8		**Lecture - TBD**		
8		**Discussion - TBD**	**Yes**	**Yes**
9		**Lecture - TBD**		
9		**Discussion - TBD**	**Yes**	**Yes**
10		**Lecture - TBD**		
10		**Discussion - TBD**	**Yes**	**Yes**
11		**Lecture - TBD**		
11		**Discussion – TBD**	**Yes**	**Yes**
12		**Lecture - TBD**		
12		**Discussion – TBD**	**Yes**	**Yes**
13		**Lecture - TBD**		
13		**Discussion - TBD**	**Yes**	**Yes**

14		**Lecture - TBD**		
14		**Discussion - TBD**	**Yes**	**Yes**
15		Open slot		
15		**Diversity, equity, and inclusion final assignment & discussion, class feedback, & snacks!**	**Final Assignment**	

Missouri State

Curricular Action Workflow

New Course Proposal Form

Submitted on 10/17/2020 by Avery Russell (AveryRussell@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: BIO

Course Number: (Check Availability) 604

Course Title: Plant-Animal Interactions

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.)

Recommended Prerequisite: BIO 367 and BIO 368 or BIO 436. The theories, evolutionary and ecological patterns, and major current topics in plant-animal interactions. This course encourages independence in learning, synthesizing, and communicating science via discussions and presentations. Topics are flexible and guided by student interests. May be taught concurrently with BIO 504. Cannot receive credit for both BIO 504 and BIO 604.

434/30000 character limit.

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)
- [x] Spring
- [ ] Spring (even-numbered years only)
- [ ] Spring (odd-numbered years only)
- [ ] Summer
- [ ] On Demand only

Complete Catalog Description:
BIO 604 Plant-Animal Interactions
Prerequisite: None
Recommended Prerequisite: BIO 367 and BIO 368 or BIO 436. The theories, evolutionary and ecological patterns, and major current topics in plant-animal interactions. This course encourages independence in learning, synthesizing, and communicating science via discussions and presentations. Topics are flexible and guided by student interests. May be taught concurrently with BIO 504. Cannot receive credit for both BIO 504 and BIO 604.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 0
Typically offered: Spring

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

To provide advanced instruction in how to search for and synthesize scientific knowledge, construct and deliver presentations, and lead discussions on a diverse array of topics related to plant-pollinator interactions. A major goal of this course is teaching the role of underrepresented scientists in shaping topics in plant-pollinator interactions.

350/30000 character limit.

Relationship to Other Departments

This course may also be of interest to students in the Darr College of Agriculture (in particular, the departments of Plant Science, Animal Science and Natural Resources).

171/30000 character limit.

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

Enter parallel course number

BIO504 Plant-Animal Interactions

How do these classes differ?

The graduate parallel course involves more advanced and independent contributions. Graduate students are expected to more actively direct discussions of weekly papers, by submitting discussion questions ahead of time and asking those questions in class. Graduate students are expected to also practice giving constructive feedback on presentations by other students.

368/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:	5	Maximum Enrollment Limit per section:	10
Anticipated Average Enrollment per semester:	5	Maximum Enrollment Limit per semester:	10
Anticipated Average Enrollment per year:	5	Maximum Enrollment Limit per year:	10
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ○ No ◉ Yes

Select course number and title being deleted.

BIO215 Introduction to the Diversity of Life

What will this course require in the way of:

Additional library Holdings

None

4/30000 character limit.

Additional computer resources

None

4/30000 character limit.

Additional or remodeled facilities

None

4/30000 character limit.

Additional equipment or supplies

None

4/30000 character limit.

Additional travel funds

None

4/30000 character limit.

Additional faculty; general vs specialized

None

4/30000 character limit.

Additional faculty; regular vs per-course

None

4/30000 character limit.

Other additional expenses

None

4/30000 character limit.

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

This course will be taught by a new faculty member as part of his regular load. BIO is deleting another course from the catalog.

129/30000 character limit.

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

Dr. Avery Russell

17/30000 character limit.

What is the anticipated source of students for this course?

From Biology majors and possibly Agriculture majors

51/30000 character limit.

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

This course will be added as an additional option to fulfill requirements in two degree programs in Biology: the Wildlife and Fisheries Biology option and the Environmental Biology and Evolution option

202/30000 character limit.

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

None

4/30000 character limit.

Other comments:

None

4/30000 character limit.

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

10/02/2020

Current Status:

Grad Council Review

Proposal Progress:

10/19/2020 - Submitted by Department Head (S Mathis)

10/20/2020 - Reviewed by Dean (Tamera Jahnke)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

Syllabus BIO 504/604

Plant-Animal Interactions (BIO 504/604)
M/W, 1:25pm – 2:40pm, Temple Hall 264

INSTRUCTOR

Dr. Avery Russell
Temple Hall 110, 607-220-4432, AveryRussell@MissouriState.edu

Office hours by appointment: feel free to text or call me 9-5pm, M-F. Due to Covid19, in-person office hours should be a last resort and are Thursday, 9:30 - 2:30pm; sanitizer, masks, and snacks-to-go are available.

COURSE DESCRIPTION

This course will focus on the theories, evolutionary and ecological patterns, and many of the major topics in plant-animal interactions. Rather than lectures and exams, this course emphasizes student-led discussions, interactive presentations, primary literature, and participation. As such, you will guide the direction of this course. Examples of the many possible topics that may be covered in this course include tactics of plant-herbivore interactions, coevolution, plant carnivory, tritrophic interactions, pollination specialization, and more. Choosing frontier topics in plant-animal interactions related to your current or future research is encouraged. A substantial portion of your time will be spent reading primary literature. Your grade will be based on presentations, class participation, and completion of short writing assignments. Your independence in learning, synthesizing, and communicating material will be evaluated.

LEARNING OUTCOMES

1. Students will be able to read and evaluate scientific papers efficiently, both within the context of the individual study and the greater theme introduced in each class.

2. Students will be able to articulate questions about the papers being read, both via written and oral communication.

3. Students will be able to discuss, be skeptical of, criticize, and defend scientific papers with other scientists.

4. Students will be able to acquire and synthesize material from a variety of studies.

5. Students will be able to design and give oral presentations on theories and principles central to plant-animal interactions.

6. Students will be able to identify general evolutionary and ecological patterns of plant-animal interactions and their importance to diverse fields of study.

Syllabus BIO 504/604

ASSESSMENT OF LEARNING

BIO 597 Grade %	BIO 697 Grade %	Category	Description
20%	10%	Reading Responses	Each week will have assigned readings. I will post a series of questions to be answered **before the class for which the reading was assigned**. See Reading Response Framework for more detail. Reading Responses are expected to be turned in on time, but there are no late penalties.
30%	30%	Presentations	Each student is expected to give at least one presentation (PowerPoint-assisted lectures) during class. Depending on class enrollment, up to two students may present on the same topic. You may select presentation topics from a predetermined list or may propose your own. Presentations will be evaluated for completeness of coverage of the broad conceptual framework, clarity, and logical organization. See Presentation Framework for more detail.
20%	20%	Discussions	In consultation with me, presentation leaders choose one or two experimental research articles about the topic **one week in advance of the discussion**. I will upload them for the class to read in advance. You will lead the subsequent discussion of the assigned papers. See Discussion Framework for more detail.
30%	20%	Participation	All students are expected to participate in discussions by discussing and evaluating the assigned readings, as well as asking questions about the readings / presentation. If you need to miss a class, let me know either before or after the fact and the participation grade for it will be dropped. If you do not let me know, the participation grade will be a zero instead.
	10%	Presentation Feedback	For each presentation by other students, graduate students are expected to submit written constructive feedback on presentations to me, to be passed on to students.
	10%	Supplemental Discussion Questions	Graduate students email two Reading Response-style questions (with answers) to the instructor as a Word document prior to the relevant Discussion. Graduate student created questions can be specific to the reading or tie together lectures, but questions must be unique and should not be about recognizing or recalling facts. Reading Response questions. Graduate students must ask their Reading Response questions during Discussion, when the appropriate opportunity arises.

READING RESPONSE FRAMEWORK

These assignments are intended to guide your participation during discussion. This course focuses on developing skills to understand and describe broad concepts, debates, and patterns in plant-animal interactions. While a detailed understanding of a given study's design will not be

necessary, the student will require some level of understanding to assess whether the study properly addresses the theme being discussed.

When emailing your typed assignment in Word, clearly indicate which study is being evaluated via a header composed of the author name(s), publication year, article title, and journal name. These are key elements that scientists use to communicate about science. **Reading Responses are due via Word document through email the day that the studies are to be discussed**. All students, **including presenters**, turn in Reading Responses each week. Assignments are limited to one page per empirical study (no Reading Response is required for review articles) and are not intended to be exhaustive.

The following questions should be answered each week for each assigned empirical (non-review) article. **On occasion, I may send out a list of alternate questions, which will substitute for the regular assignment**. Be prepared to discuss the questions during discussion.

Regular Questions:

- Briefly describe the conceptual framework underlying this study.

- Briefly describe why or why you did not find the study to be a convincing test of the broad concept underlying the study. This could also extend to addressing whether you found the concept - as introduced by the authors - tenable.

- Did you find a methodological flaw(s) in this study that impacts a key result? Describe it/them briefly.

- Briefly describe one future direction that might/should be taken with the work described in the paper.

- Did the study leave you with any questions? Briefly describe two such questions. While these could be about methodology, they could also be about the conceptual framework or the conclusions the study made.

PRESENTATION FRAMEWORK

I encourage students to discuss their presentations with me at least a week prior to their presentation day. For each student's presentation I will provide review paper(s) and a broad outline to serve as a guide for developing the presentation. **The presentation is due as a PowerPoint in the shared Dropbox the day that the presentation is to be given.**

Assuming one student per presentation topic, your presentation should have approximately 40 minutes of material, with class participation filling the rest of the time (leave ample time for questions and discussion during your presentation). Halve this if there are two students per presentation topic. During presentations, you should ask questions and seek audience participation. If you are not presenting, endeavor to ask questions during the presentation and participate in the discussion that follows.

Syllabus BIO 504/604

In general, your presentation should begin with an introduction of the overall topic and an outline of the topics that will be covered. Major controversies and conclusions in the field as pertain to the topic should be covered. It will be necessary to read many more papers than have been assigned for the discussion to make a thorough and professional presentation.

DON'T PAY FOR ARTICLES: you can use https://libraries.missouristate.edu/ or request an article through https://libweb.missouristate.edu/ill/logon.htm. It will be **impossible** to cover all material relevant to a given presentation topic, so focus on covering broad themes and briefly discuss appropriate case studies. When crafting your presentation, include not only the "classic" literature, but the contemporary and foundational work of minoritized researchers (i.e., non-white, non-male perspectives). Come prepared to speak on brief generalities about the professional careers of at least two focal minoritized scientists (e.g., other notable scholarly and service contributions, main themes of research). Employ active learning approaches (e.g., think-pair-share, one-minute papers, class games).

While not required, I encourage using an assertion-evidence framework for these lecture-style presentations: http://www.assertion-evidence.com/

Presenters should follow good presenting guidelines: slides are to serve as a visual aid (text should be restricted to essential information) and not a crutch for insufficient preparation. However, I understand that this material may be novel to the presenter and that they may require notes to properly cover the subject: this will be taken into consideration.

DISCUSSION FRAMEWORK

There are many ways to lead a successful discussion. I suggest that the discussion leader use the Reading Responses as a guide. Begin by refreshing the discussion group's memory with a brief summary of the study and what lines of evidence they use to support it. Ask questions related to the conceptual framework, the general methods, future directions, and unclear areas to help guide the discussion when needed. **Awkward silences are ok.** Avoid quizzing people on specific knowledge, but guide the discussion to focus on how this study relates to the broader concepts of plant-animal interactions that you introduced in the presentation, active areas of study, and gaps in knowledge. It is often beneficial to bring in conceptual themes from your lecture or even previous lectures. **Best yet is to bring pre-prepared questions for when participation from your audience wanes.**

COURSE MATERIALS

There is no textbook for this course. The required readings are all scientific articles, which will be available as PDF files in the course OneDrive. These articles will form the basis for our discussion sections and accompanying presentation. You are required to read the assigned reading before class. All class materials will be uploaded to the class OneDrive.

DIVERSITY AND INCLUSION

In this classroom we will all work to create an inclusive learning environment in which diverse perspectives and people are respected, recognized and fostered. Individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability, and other visible and nonvisible differences are

welcome. **If you feel comfortable doing so, please advise your instructor of your name and pronouns so that I may address you correctly.**

Historically, the privileged have controlled access to science, and moreover, the scientific contributions of underrepresented groups have been (often intentionally) minimized. Diversity is an asset for science and learning and we will often discuss the contributions of minoritized scientists and, frequently, why that diversity was critical to pushing the field forward. We will additionally practice awareness of our language and use gender-inclusive language, and attempt to be aware of our implicit biases (e.g., we will actively seek out diverse resources, show respect for our colleagues and peers, and discuss scholars with due respect for their titles).

POLICY STATEMENTS

ATTENDANCE POLICY

Presence in class is expected: your participation is highly valued! If you need to miss a class, please let me know by email. **I will not penalize you for non-attendance if you give notice or if there was an unexpected emergency**; I drop the participation grade for that day, which weights your other grades more heavily. If you need to skip your presentation day, we can assign you to another presentation, if there is enough advanced notice.

GRADING POLICY

I do not take off points for late assignments. If you have to miss an assignment and cannot make it up, let me know and I can drop the assignment from your grade.

Letter grades are assigned based upon percentage of points earned:

A	93 - 100%
A-	90 - 92.9%
B+	87 - 89.9%
B	83- 86.9%
B-	80 - 82.9%
C+	77 - 79.9%
C	73- 76.9%
C-	70 - 72.9%
D+	67 - 69.9%
D	65- 66.9%
F	below 65%

ACADEMIC INTEGRITY

Missouri State University is committed to developing educated persons who practice personal and academic integrity. You are responsible for knowing and following the university's academic integrity policy, the "Student Academic Integrity Policies and Procedures" (available online at Academic Integrity Policies and Procedures (Students) and also at the Reserves Desk in Meyer Library). Participation in any form of academic dishonesty is subject to sanctions.

NONDISCRIMINATION POLICY

Syllabus BIO 504/604

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, 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 me and can also be brought to the attention of my Department Head. Please visit the OIEC website.

Missouri State University has a Title IX policy that guides our response to instances of sexual violence. Sexual Violence includes: Rape, Sexual Assault, Sexual Misconduct, Sexual Discrimination, Domestic Violence, Dating Violence, Stalking, Sexual Harassment and Pregnancy issues. The Title IX policy can be located on the MSU Title IX website. This website is also a good resource for any questions or issues involving Title IX and contains contact information for the MSU Title IX Office and staff. Read an overview of the Title IX office.

I am a "Responsible Employee", such that if an MSU student discloses a Title IX related issue to me, I am required to report such disclosure to the Title IX Coordinator.

ACCOMMODATIONS

If you have a disability and anticipate barriers related to this course, please contact the Disability Resource Center (DRC) at the Disability Resource Center website, Meyer Library, Suite 111, 417-836-4192, to request accommodations (MSU usually requires students provide documentation relating to their disability). Once an accommodation plan is established, please notify me of accommodations within the first two weeks of class, otherwise I will not receive the accommodation plan. Instructors are not required to apply accommodations retroactively.

Any student who faces challenges securing their food or housing or has childcare responsibilities and believes this may affect their performance in the course is urged to contact the Dean of Students for support and to look into filling out a request with Bear Pantry, which focuses on alleviating food insecurity. Please notify me if you are comfortable doing so. This will enable me to provide resources I may have. **Additionally, I always have snacks in my office for students.**

MENTAL HEALTH

A range of personal issues can impede learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. You can learn more about free (**8 sessions with a counselor per semester**) and confidential Missouri State University Counseling Center services available to assist you at counselingcenter.missouristate.edu.

I want to ensure your mental health, in addition to your academic success. We all have bad days, but if your bad day has led you to feel that there is no hope for better days, please take advantage of the suicide prevention resources below. I am not a professional counselor, but if you would like to talk to someone or want somebody to listen, MSU has professionals who can help, and I can assist you with making those contacts. https://www.missouristate.edu/policy/Op1_08-suicide-prevention-available-suicide-programs-and-related-procedures.htm.

Syllabus BIO 504/604

CELL PHONE POLICY

All students have a responsibility to each other to take efforts not to disrupt each other's learning. Therefore, please keep your cellphones in a silent (vibration) mode. You may use your cellphones to take notes and look up information if you do not have a laptop or notebook - but this privilege will be revoked if you are not acting in good faith.

FACE COVERING POLICY

In accord with the MSU Mask and Face Covering policy (https://www.missouristate.edu/Coronavirus/masking-policy.htm), Greene County Health Department (https://www.springfieldmo.gov/5140/Masks-and-Face-Coverings), and the Springfield City Ordinance (https://www.springfieldmo.gov/AgendaCenter/ViewFile/Item/14780?fileID=203417), masks must be worn at all times over the nose and mouth during seated class to reduce COVID-19 related health risks for everyone engaged in the educational process. This is in accordance with the Centers for Disease Control and Prevention (CDC) guidelines (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wear-cloth-face-coverings.html). Face shields are not considered masks or face coverings.

Students who cannot wear a mask or face covering due to a disability must contact the Disability Resource Center (DRC) (https://www.missouristate.edu/disability/) to initiate the interactive accommodation process. A student's refusal to wear a mask or face covering without accommodation will be considered a classroom disruption, consistent with Op3.04-11 Class Disruption, and may result in the student being administratively dropped from the class section.

MISSING CLASS IF YOU ARE SICK

Do not come to class if you are sick. Do seek medical attention from your doctor or at Mager's Health and Wellness Center. Contact me to let me know you are sick and will not be in class. Let me know what resources you need to succeed.

EMERGENCY RESPONSE STATEMENT

Talk with me to become familiar with a basic emergency response plan, exits specific to the classroom, and the location of building evacuation centers. Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with me. For more information, visit University Safety.

The racquetball courts are our shelter. Our emergency assembly point is North to McDonald Arena Gymnasium; Northwest to Meyer Library Main Entrance.

Syllabus BIO 504/604

LIST OF POTENTIAL TOPICS (and in parentheses, the potential sub-topics therein)

Tactics of plant-herbivore interactions [instructor-taught]	**Mimicry and camouflage** (in pollination, in herbivory, negative/positive freq. dep selection, perfect, perceptual)
Theory of herbivory [instructor-taught]	**Plant-animal interactions and climate change** (phenological mismatch, invasions, multigenerational herbivory)
Plant-herbivore coevolution (secondary metabolites, defenses, recognition, dead ends; ant-plant prostoma)	**Species invasions and biological control** (plants that attract/disperse, what makes good invasive, what facilitates invasion)
Tritrophic interactions (plant defense, ant-plant, animal use to invade plants)	**Paleoecology in plant-animal interactions** (what it is, how determine, major evolutionary transitions)
Alternative feeding (types [carnivory, coprophagy], why, evolutionary patterns, consequences for pollination)	**Species restoration and interactions** (interaction webs, heterogeneity, management of biodiversity, metapopulations, risks)
Microbial interactions (mediating tritrophic interactions, plant-plant competition, communication)	**Genetic engineering in agriculture** (how done, common targets, risks)
Angiosperm evolution (consequence of animal pollination, alternate hypotheses)	**Plant mating systems** (basics, patterns, why evolve, consequences for traits)
Pollination specialization (behavior, plant traits, pollination syndromes, reciprocal exploitation)	**Community consequences of herbivory** (nutrient availability, grazing, fire risk, multi-trophic)
Frugivory and seed dispersal by animals (ants and elaisomes, mammals and extinct megafauna, burs and devils claws, fruits as bird laxatives)	**Floral displays and rewards** (consumptive emasculation, nutrient tradeoffs, herbivory tradeoff, secondary metabolites in rewards)

Syllabus BIO 504/604

CLASS SCHEDULE

Syllabus BIO 504/604

Module Number	Date	Presentation/Discussion Topic	Reading Response Due?	Reading due?
1		Instructor-led lecture: Intro / Tactics of plant-herbivore interactions		
1		Instructor-led discussion		**Yes**
2		Instructor-led lecture: Theory of herbivory		
2		Instructor-led discussion	**Yes**	**Yes**
3		**Lecture - TBD**		
3		**Discussion - TBD**	**Yes**	**Yes**
4		**Lecture - TBD**		
4		**Discussion - TBD**	**Yes**	**Yes**
5		**Lecture - TBD**		
5		**Discussion - TBD**	**Yes**	**Yes**
6		**Lecture - TBD**		
6		**Discussion - TBD**	**Yes**	**Yes**
7		**Lecture - TBD**		
7		**Discussion - TBD**	**Yes**	**Yes**
8		**Lecture - TBD**		
8		**Discussion - TBD**	**Yes**	**Yes**
9		**Lecture - TBD**		
9		**Discussion - TBD**	**Yes**	**Yes**
10		**Lecture - TBD**		
10		**Discussion - TBD**	**Yes**	**Yes**
11		**Lecture - TBD**		
11		**Discussion – TBD**	**Yes**	**Yes**
12		**Lecture - TBD**		
12		**Discussion – TBD**	**Yes**	**Yes**
13		**Lecture - TBD**		
13		**Discussion - TBD**	**Yes**	**Yes**

14		**Lecture - TBD**		
14		**Discussion - TBD**	**Yes**	**Yes**
15		Open slot		
15		**Diversity, equity, and inclusion final assignment & discussion, class feedback, & snacks!**	**Final Assignment**	

Missouri State

Curricular Action Workflow

designed by Computer Ser

Change Program Proposal Form

Submitted on 10/16/2020 by Avery Russell (AveryRussell@MissouriState.edu).

Department:

Biology

Type of Program

Choose One:

- ○ Non-Comprehensive Undergraduate Major
- ◉ Comprehensive Undergraduate Major
- ○ Graduate Program
- ○ Option
- ○ Minor
- ○ Certificate

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:

Biology/Environmental Biology and Evolution-BS

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

Note that the Title of Program Affected should be "Biology (Comprehensive) (BS)", but no such option was listed in the dropdown menu.

Attached View Attachment

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)*

POWERED BY TINYMCE

Attached View Attachment

What is changing? Check all boxes that apply:

- [ ] Title change
- [ ] Adding option to an existing program (major)
- [ ] Deleting option from an existing program (major)
- [ ] Adding existing course(s) totaling 0 credits
- [x] Adding newly created course(s) totaling 3 credits

(Note: A new course proposal must be submitted for each new course)

- [ ] Deleting courses from the program (major)

(Note: A Delete Course Proposal form must be submitted if deleting course from catalog.)

- [ ] Changing admission requirements
- [ ] Other

Reason for Proposed Change:

(1) A new course, BIO 504 (Plant-Animal Interactions), is being added to the Biology course catalog; it will NOT ad hours to the program requirements but will be listed as a course that students can choose to fulfill requirements i the options in Environmental Biology and Evolution and Wildlife and Fisheries Biology. The additional course will address current gaps in the program in the area of plant biology , making students interested in this are more competitive in the job market. (2) We are correcting an error in the number of hours for BIO 579, from 4 hours to hours, in the program description. The change in the number of hours was previously approved, but we failed to submit the program change.

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

10/02/2020

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.

Copy As New Proposal

Biology (Comprehensive) (BS)

Bachelor of Science

Major requirements

Major core:

1. BIO 121(4), 122(4), 235(3), 236(1), 302(1), 492(0), 550(3).
2. PHY 123(4) or 203(5) and PHY 124(4) or 204(5).
3. MTH 137(3) or 138(5), or eligibility for MTH 261 on mathematics placement test.
4. BIO 312(3) and 313(2) or BIO 320(4) or 361(4) or 544(4); consult options below before selecting course.
5. CHM 116(4) and 117(1), or CHM 160(4) and 161(1); consult options below before selecting course.
6. CHM 201(3) and 202(2), or CHM 302(5) or 342(3) and 343(2); consult options below before selecting course.
7. Public Affairs Capstone Experience will be fulfilled by completion of BIO 302(1), 492(0) and two additional courses from the following: BIO 300(1), 355(4), 367(3), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(4), 584(3), 589(3). Courses may also be used to satisfy option requirements.

Commented [MSA1]: Change hours to 3

University level requirements:

1. General Education Program and Requirements
2. General Baccalaureate Degree Requirements

Complete one of the following options:

Note: With approval of advisor, up to three hours of the following can be substituted for one of the BIO courses listed in any option: BIO 300, 399, 499, or 597.

Pre-Teacher Education option (72-74 hours total for major)

This option is designed for students preparing to enter post-graduate studies to become a high school science teach. This program does not include courses in teacher education that are required by the state of Missouri for certification as a teacher. Certification requirements can be met through postbaccalaureate programs or master's program at Missouri State University.

1. BIO 312(3), 313(2), 361(4), 367(3), 368(1), 515(3).
2. Nine additional hours of upper division Biology courses (with approval of advisor).
3. Related chemistry courses: CHM 160(4), 161(1), 170(3), 171(1); CHM 201(3) and 202(2), or CHM 302(5).
4. Related science courses: GLG 110(4); GRY 135(4); SCI 505(3).

5. Related mathematics requirement. One course from: MTH 137(3), or eligibility for MTH 261(5) on Mathematics Placement test.

Environmental Biology and Evolution option (72-85 hours total for major)

1. BIO 367(3), 368(1), 515(3).
2. One course in biodiversity and evolution: BIO 334(3), 339(2), 370(4), 371(3), 380(5), 530(3), 571(4), 573(3), 574(2), 575(3), 576(3), 577(3); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: BIO 534(2) and 535(1); 555(3), 556(3), 587(3), 588(3).
3. One course in population biology: BIO 436(4), 505(3), 532(3), 540(4), 560(3), 563(3), 567(4), 578(4), 584(3), 589(3); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: BIO 557(2) and 558(2).
4. Three hours in community/ecosystem biology: BIO 373(3), 485(1-3), 508(3), 509(4), 533(3), 539(3), 547(3), 562(4), 564(2), 579(4); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: BIO 537(2), 538(2), 565(3), 566(2).
5. One biology course with a substantial field component. A course used to satisfy this requirement also may be counted toward the biodiversity, population biology, and community/ecosystem biology concentration areas described above. Complete one of the following: BIO 334(3), 339(2), 370(4), 436(4), 509(4), 527(1-4), 562(4), 564(2), 574(2), 575(3), 576(3), 577(3), any biology course taught at the Gulf Coast Research Laboratory, any biology course taught at the Bull Shoals Field station or another field station (with the approval of your advisor).
6. Zero to eight hours of elective BIO courses at the level of 300 or higher to total a minimum of 43 hours in biology.
7. One of the following mathematics, statistics, or computer programming courses: MTH 261(5), MTH 287(3), CSC 125(4), CSC 130(3), CSC 587(3), BIO 551(2), PSY 527(3).
8. Related requirements in chemistry: CHM 160(4), 161(1), 170(3), 171(1).
9. One of the following related science courses: AGN 215(3), ANT 305(3), ANT 375(3); CHM 260(3) or 460(3); GLG 171(3), GRY 351(3).
10. One of the following related fields of study courses: BIO 561(2), ECO 540(3), GEO 363(4), LAW 537(3), PHI 302(3), PLS 555(3), PSY 379(3).

Microbiology and Biotechnology option (71-87 hours total for major):

1. BIO 312(3), 313(2), 320(4).
2. 21 additional hours in BIO courses with a minimum of 18 hours from the following: BIO 355(4), 508(3), 511(4), 512(3); 505(3) or 515(3); 517(4), 518(2), 520(3), 530(3), 540(4). BMS 524(3) may be substituted for one of these courses. CHM 302(5); or CHM 502(3) and 503(1); or CHM 504(3) and 505(1) may be substituted for one of these courses.
3. Related requirements in chemistry: CHM 160(4), 161(1), 170(3), 171(1); CHM 201(3) and 202(2), or CHM 342(3) and 345(2) and CHM 343(3), or CHM 342(3) and 345(2); CHM 352(3) or CHM 554(3) and 556(3).

Wildlife and Fisheries Biology option (68-87 hours total for major):

1. BIO 320(4) or 361(4), 367(3), 368(1).
2. Two courses in plant biology from: BIO 334(3), 339(2), 530(3), 544(4).
3. Three courses in animal biology from: BIO 370(4), 371(3), 380(5), 571(4), 573(3), 574(2), 575(3), 576(3), 577(3).
4. Five hours in management from: BIO 373(3), 485(1-3), 509(4), 532(3), 533(4), 562(4), 589(3).
5. Two courses in ecology and evolution from: BIO 436(4), 515(3), 539(3), 563(3), 567(4), 578(4), 579(4), 584(3).
6. One course in human dimensions from: AGN 335(3), BIO 547(3), BIO 561(2), CRM 210(3), ECO 540(3), GRY 108(3), GRY 351(2), PHI 302(3), PLS 555(3), LAW 537(3).
7. One course in earth/environmental science from: AGN 215(3), CHM 260(3), GLG 110(4), GRY 142(4).

Biology (Comprehensive) (BS)

Bachelor of Science

Major requirements

Major core:

1. BIO 121(4), 122(4), 235(3), 236(1), 302(1), 492(0), 550(3).
2. PHY 123(4) or 203(5) and PHY 124(4) or 204(5).
3. MTH 137(3) or 138(5), or eligibility for MTH 261 on mathematics placement test.
4. BIO 312(3) and 313(2) or BIO 320(4) or 361(4) or 544(4); consult options below before selecting course.
5. CHM 116(4) and 117(1), or CHM 160(4) and 161(1); consult options below before selecting course.
6. CHM 201(3) and 202(2), or CHM 302(5) or 342(3) and 343(2); consult options below before selecting course.
7. Public Affairs Capstone Experience will be fulfilled by completion of BIO 302(1), 492(0) and two additional courses from the following: BIO 300(1), 355(4), 367(3), 370(4), 373(3), 398(1), 399(1-3), 485(1-3), 498(3), 499(1-3), 501(2), 505(3), 508(3), 509(4), 511(4), 512(3), 520(3), 527(1-4), 539(3), 547(3), 561(2), 573(3), 574(2), 575(3), 576(3), 577(3), 578(4), 579(**43**), 584(3), 589(3). Courses may also be used to satisfy option requirements.

University level requirements:

1. General Education Program and Requirements
2. General Baccalaureate Degree Requirements

Complete one of the following options:

Note: With approval of advisor, up to three hours of the following can be substituted for one of the BIO courses listed in any option: BIO 300, 399, 499, or 597.

Pre-Teacher Education option (72-74 hours total for major)

This option is designed for students preparing to enter post-graduate studies to become a high school science teach. This program does not include courses in teacher education that are required by the state of Missouri for certification as a teacher. Certification requirements can be met through postbaccalaureate programs or master's program at Missouri State University.

1. BIO 312(3), 313(2), 361(4), 367(3), 368(1), 515(3).
2. Nine additional hours of upper division Biology courses (with approval of advisor).
3. Related chemistry courses: CHM 160(4), 161(1), 170(3), 171(1); CHM 201(3) and 202(2), or CHM 302(5).
4. Related science courses: GLG 110(4); GRY 135(4); SCI 505(3).

5. Related mathematics requirement. One course from: MTH 137(3), or eligibility for MTH 261(5) on Mathematics Placement test.

Environmental Biology and Evolution option (72-85 hours total for major)

1. BIO 367(3), 368(1), 515(3).
2. One course in biodiversity and evolution: BIO 334(3), 339(2), 370(4), 371(3), 380(5), 530(3), 571(4), 573(3), 574(2), 575(3), 576(3), 577(3); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: BIO 534(2) and 535(1); 555(3), 556(3), 587(3), 588(3).
3. One course in population biology: BIO 436(4), 505(3), 532(3), 540(4), 560(3), 563(3), 567(4), 578(4), 584(3), 589(3); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: BIO 557(2) and 558(2).
4. Three hours in community/ecosystem biology: BIO 373(3), 485(1-3), **504(3),** 508(3), 509(4), 533(3), 539(3), 547(3), 562(4), 564(2), 579(**43**); the following courses taught during the summer at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi: BIO 537(2), 538(2), 565(3), 566(2).
5. One biology course with a substantial field component. A course used to satisfy this requirement also may be counted toward the biodiversity, population biology, and community/ecosystem biology concentration areas described above. Complete one of the following: BIO 334(3), 339(2), 370(4), 436(4), 509(4), 527(1-4), 562(4), 564(2), 574(2), 575(3), 576(3), 577(3), any biology course taught at the Gulf Coast Research Laboratory, any biology course taught at the Bull Shoals Field station or another field station (with the approval of your advisor).
6. Zero to eight hours of elective BIO courses at the level of 300 or higher to total a minimum of 43 hours in biology.
7. One of the following mathematics, statistics, or computer programming courses: MTH 261(5), MTH 287(3), CSC 125(4), CSC 130(3), CSC 587(3), BIO 551(2), PSY 527(3).
8. Related requirements in chemistry: CHM 160(4), 161(1), 170(3), 171(1).
9. One of the following related science courses: AGN 215(3), ANT 305(3), ANT 375(3); CHM 260(3) or 460(3); GLG 171(3), GRY 351(3).
10. One of the following related fields of study courses: BIO 561(2), ECO 540(3), GEO 363(4), LAW 537(3), PHI 302(3), PLS 555(3), PSY 379(3).

Microbiology and Biotechnology option (71-87 hours total for major):

1. BIO 312(3), 313(2), 320(4).
2. 21 additional hours in BIO courses with a minimum of 18 hours from the following: BIO 355(4), 508(3), 511(4), 512(3); 505(3) or 515(3); 517(4), 518(2), 520(3), 530(3), 540(4). BMS 524(3) may be substituted for one of these courses. CHM 302(5); or CHM 502(3) and 503(1); or CHM 504(3) and 505(1) may be substituted for one of these courses.
3. Related requirements in chemistry: CHM 160(4), 161(1), 170(3), 171(1); CHM 201(3) and 202(2), or CHM 342(3) and 345(2) and CHM 343(3), or CHM 342(3) and 345(2); CHM 352(3) or CHM 554(3) and 556(3).

Wildlife and Fisheries Biology option (68-87 hours total for major):

1. BIO 320(4) or 361(4), 367(3), 368(1).
2. Two courses in plant biology from: BIO 334(3), 339(2), 530(3), 544(4).
3. Three courses in animal biology from: BIO 370(4), 371(3), 380(5), 571(4), 573(3), 574(2), 575(3), 576(3), 577(3).
4. Five hours in management from: BIO 373(3), 485(1-3), 509(4), 532(3), 533(4), 562(4), 589(3).
5. Two courses in ecology and evolution from: BIO 436(4), **504(3),** 515(3), 539(3), 563(3), 567(4), 578(4), 579(**43**), 584(3).
6. One course in human dimensions from: AGN 335(3), BIO 547(3), BIO 561(2), CRM 210(3), ECO 540(3), GRY 108(3), GRY 351(2), PHI 302(3), PLS 555(3), LAW 537(3).
7. One course in earth/environmental science from: AGN 215(3), CHM 260(3), GLG 110(4), GRY 142(4).

Missouri State

Curricular Action Workflow

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Change Course Proposal Form

Submitted on 10/13/2020 by Toby Dogwiler (TDogwiler@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:

GRY275 Introduction to Plane Surveying

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:

GRY 275 Introduction to Plane Surveying

Prerequisite: MTH 138 or MTH 181 or MTH 261 or MTH 287. Fundamental concepts and practices of land surveying. Practical exercises comparable to those used at Missouri University of Science and Technology. 3(2-3) 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 275 Introduction to Plane Surveying

Prerequisite: ~~MTH 138 or MTH 181 or MTH 261 or MTH 287~~ **MTH 137 or higher**. Fundamental concepts and practices of land surveying. Practical exercises comparable to those used at Missouri University of Science and Technology. 3(2-3) F

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

We are realigning the mathematics prerequisite with the revised curriculum and numbering of precalculus math courses.

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.

- [x] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [x] 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) 09/25/2020

Current Status:

College Council Review

Proposal Progress:

10/13/2020 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

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Change Course Proposal Form

Submitted on 10/13/2020 by Toby Dogwiler (TDogwiler@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:

GEO360 Interpretation of Aerial Photography

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:

GEO 360 Interpretation of Aerial Photography

Prerequisite: 30 hours. Detection, identification, and analysis of objects or features from film and digital aerial photography and other types of high resolution remotely sensed images. Laboratory emphasizes manual and digital image interpretation for land cover mapping, forestry, agriculture, geology, and planning applications. Field trip is required. 3(2-3) 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.)

GEO 360 Interpretation of Aerial Photography

~~Prerequisite: 30 hours.~~ Detection, identification, and analysis of objects or features from film and digital aerial photography and other types of high resolution remotely sensed images. Laboratory emphasizes manual and digital image interpretation for land cover mapping, forestry, agriculture, geology, and planning applications. Field trip is required. 3(2-3) F

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

Based on a discussion at a curriculum meeting the Geospatial Science faculty unanimously agreed this prerequisite was not necessary. This group includes the faculty member who teaches the 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.

- [x] Routine or annual review/assessment of curriculum
- [x] 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) 01/17/2020

Current Status:

College Council Review

Proposal Progress:

10/13/2020 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Change Course Proposal Form

Submitted on 09/25/2020 by Damon Bassett (DBassett@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:

GLG415 Invertebrate Paleontology

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

Enter parallel course number

GLG615 Invertebrate Paleontology

How do these classes differ?

Graduate students are required to lead an in class discussion and will have longer final presentation requirements.

Current online catalog description:

GLG 415 Invertebrate Paleontology

Prerequisite: GLG 314. Morphology and taxonomy of invertebrate fossils. 4(2-4) 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.)

GLG 415 Invertebrate Paleontology

Prerequisite: GLG 314. Morphology and taxonomy of invertebrate fossils. May be taught concurrently with GLG 615. Cannot receive credit for both GLG 415 and GLG 615. 4(2-4) S

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [ ] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [x] Description

Reason for proposed change

The course description needs to include wording to inform students that they cannot get credit for GLG 415 and GLG 615.

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.

- [ ] Routine or annual review/assessment of curriculum
- [ ] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [x] Other (be specific):

College Council informed me that the course description would need to match the new graduate level course.

- [x] 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) 01/24/2020

Current Status:

College Council Review

Proposal Progress:

09/30/2020 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

Change Course Proposal Form

Submitted on 09/24/2020 by Toby Dogwiler (TDogwiler@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:

GEO669 Landscape Analysis

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

Enter parallel course number

GEO569 Landscape Analysis

How do these classes differ?

NOTE: the proposed change is ONLY for the graduate-level GEO 669.

The graduate level course includes more difficult projects (i.e., additional steps and concepts) and additional quiz and exam questions for graduate students. Graduate students are also expected to contribute more to assisting each other and undergrads in helping peers via the course discussion board.

Current online catalog description:

GEO 669 Landscape Analysis

Prerequisite: GEO 363. 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 569. Cannot receive credit for both GEO 669 and GEO 569. 3(1-2) FE

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.)

GEO 669 Landscape Analysis

Recommended ~~P~~**p**rerequisite: GEO 363 **or GEO 657**. 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 569. Cannot receive credit for both GEO 669 and GEO 569. 3(1-2) FE

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

All other graduate level Geospatial Science courses have "recommended" prerequisites. This course should have listed the prerequisite as such when initially proposed. Also, our newly approved GEO 657 is another option we recommend for graduate students who lack GEO 363 or the equivalent from their undergraduate curriculum.

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.

- [x] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):
- [x] 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) 08/28/2020

Current Status:

Grad Council Review

Proposal Progress:

09/24/2020 - Submitted by Department Head (Toby Dogwiler)

09/24/2020 - 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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New Course Proposal Form

Submitted on 09/25/2020 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. May be taught concurrently with GLG 415. Cannot receive credit for both GLG 415 and GLG 615.

142/30000 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	☐ 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:
GLG 615 Invertebrate Paleontology
Prerequisite: None
Morphology and taxonomy of invertebrate fossils. May be taught concurrently with GLG 415. Cannot receive credit for both GLG 415 and GLG 615.
Credit hours: 4 Lecture contact hours: 2 Lab contact hours: 4
Typically offered: 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 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).

377/30000 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?

Graduate students will be responsible for an in class discussion and their final presentations will be longer.

110/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:	2	Maximum Enrollment Limit per section:	20
Anticipated Average Enrollment per semester:	2	Maximum Enrollment Limit per semester:	20
Anticipated Average Enrollment per year:	2	Maximum Enrollment Limit per year:	20
Faculty Load Assignment (equated hours):	6		

Is another course being deleted? ◉ No ○ Yes

Select course number and title being deleted.

nullnull null

What will this course require in the way of:

Additional library Holdings

None

4/30000 character limit.

Additional computer resources

None

4/30000 character limit.

Additional or remodeled facilities

None

4/30000 character limit.

Additional equipment or supplies

None

4/30000 character limit.

Additional travel funds

None

4/30000 character limit.

Additional faculty; general vs specialized

None

4/30000 character limit.

Additional faculty; regular vs per-course

None

4/30000 character limit.

Other additional expenses

None

4/30000 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 GGP graduate student population, though graduate students in other related programs would be welcome.

125/30000 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

4/30000 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:

Faculty Senate Executive Committee Review

Proposal Progress:

09/30/2020 - Submitted by Department Head (Toby Dogwiler)

09/30/2020 - Reviewed by Dean (Tamera Jahnke)

10/07/2020 - Approved by Grad Council (Ching-Wen Chang)

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
office: TEM 352
phone: 836-4897
e-mail: dbassett@missouristate.edu
Office Hours: **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	*introduction, history of paleontology*	Ch. 1
Jan. 21	*fossilization, taphonomy, and traces*	Ch. 1, 19
Jan. 28	*paleoecology, protists and porifera*	Ch. 8, 12
Feb. 4	*paleoecology (cont'd), cnideria and bryozoa*	Ch. 8, 13, & 14
Feb. 11	*reefs, systematics* **Exam 1- Thursday 2/14**	Ch. 4
Feb. 18	*species and variation, brachiopods*	Ch. 2, 14
Feb. 25	*evolution and speciation, arthropods*	Ch. 3, 15
Mar. 4	*evolution (cont'd)*	Ch. 5
Mar. 11	*SPRING BREAK*	
Mar. 18	*early earth*	Ch. 11
Mar. 25	*functional morphology, molluscs (gastropods)* **Exam 2- Thursday 3/28**	Ch. 7, 16
Apr. 1	*functional morphology (cont'd), molluscs (bivalves)*	Ch. 7, 16
Apr. 8	*biostratigraphy, molluscs (cephalopods)* **(no class on 4/11 – Spring Holiday)**	Ch. 10, 16
Apr. 15	*biogeography, echinoderms, graptolites, and basal verts.*	Ch. 9, 17, 18
Apr. 22	*diversity, mass extinctions*	Ch. 6
Apr. 29	*vertebrates & plants et al.* **Exam 3, Thursday 5/2**	Ch. 18, 20
May 6	*Presentations*	
	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
8 lab quizzes	80 pts
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/ldc.

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/.

Missouri State

Curricular Action Workflow

Change Program Proposal Form

Submitted on 10/13/2020 by Toby Dogwiler (TDogwiler@MissouriState.edu).

Department:

Geography, Geology, & Planning

Type of Program

Choose One:

- (●) Non-Comprehensive Undergraduate Major
- ( ) Comprehensive Undergraduate Major
- ( ) Graduate Program
- ( ) Option
- ( ) Minor
- ( ) Certificate

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:

Geology-BS (Non-Comprehensive)

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

Attached View Attachment

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)*

POWERED BY TINYMCE

Attached View Attachment

What is changing? Check all boxes that apply:

- [ ] Title change
- [ ] Adding option to an existing program (major)
- [ ] Deleting option from an existing program (major)
- [ ] Adding existing course(s) totaling 0 credits
- [ ] Adding newly created course(s) totaling 0 credits

(Note: A new course proposal must be submitted for each new course)

- [ ] Deleting courses from the program (major)

(Note: A Delete Course Proposal form must be submitted if deleting course from catalog.)

- [ ] Changing admission requirements
- [x] Other

Changing the math requirement for the major from "MTH 138(5) or 287(3)" to "MTH 137(3) or higher".

Reason for Proposed Change:

We are aligning our MTH requirement to the changes to the precalculus mathematics curriculum made by the Math department. The essence of our math requirement is not truly changing. The old requirements and our newly revised requirements result in more or less the same minimum math content.

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

09/18/2020

Current Status:

College Council Review

Proposal Progress:

10/13/2020 - Submitted by Department Head (Toby Dogwiler)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

Geology (Non-Comprehensive)

Bachelor of Science

Major requirements (45-47 hours):

1. GLG 110(4) or both GLG 171(3) and GLG 172(1); GLG 314(3), 332(3), 333(3), 334(3), 340(4), 358(3).
2. Four hours from GLG 412 or GLG 413 or equivalent pre-approved field geology course transferred from another university.
3. Three hours from GLG courses numbered 318 or higher.
4. Three additional hours from GLG courses numbered 400 or higher.
5. CHM 160(4), 161(1).
6. MTH 138(5) or 287(3).
7. GEO 363(4).
8. Public Affairs Capstone Experience will be fulfilled by completion of GLG 358(3).
9. Minor required (or second major). Geology majors wishing to emphasize paleontology should minor in biology.

University level requirements:

1. General Education Program and Requirements
2. General Baccalaureate Degree Requirements

Geology (Non-Comprehensive)

Bachelor of Science

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