CNAS College Council October 1, 2024

Committee College of Natural and Applied Sciences College Council

Notes

Approval of minutes from September meeting.

Total Proposals 7

BIO - 210 - Elements of Microbiology

2025-2026 UG Course Delete Form

General Catalog Information

Instructions

Complete Proposal Form

Complete any required fields, marked with an *.
Do not edit any existing, pre-populated fields for this delete proposal.
Generate the **Impact Report** by clicking *Run Impact Report* at the top of the page,select the UG catalog map, and copy the results into the space provided on the form. **This is required.**
Complete the *Acknowledgement* section.

Launch Proposal

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To Review Proposal (After Launch)

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The information imported for this course deletion is from the most recent catalog.
If deleting an identical or parallel course, be sure to submit a corresponding delete or change course form to update the identical/parallel relationship with the other course(s).
If the deleted course is listed in catalog program information, a corresponding program change must be submitted. **Deleted courses are not automatically deleted from programs.**
For additional system support, email curriculum@missouristate.edu.
For information regarding Faculty Senate bylaws, email facultysenate@missouristate.edu.

Academic Unit:* Department of Biology

Course Code:* BIO

Course Number:* 210

Course Title:* Elements of Microbiology

Course Description:* Public health aspects of microbiology, particularly causes and control of infectious diseases, immunology, sterilization and disinfection, and food and water bacteriology. A student who takes BIO 210 and BIO 310 receives credit toward graduation only for BIO 310.

Is this course a requirement in any program?* ○ Yes ◉ No

Rationale

Why is this course being deleted?* We replaced this course (BIO210) with two new courses by splitting the lecture and lab. Now, we have BIO212 (lecture) and BIO213 (lab) in the catalog, and this course (BIO210) should be deleted.

How was this determination made?*
- ☑ Routine or annual review/assessment of curriculum
- ☑ Faculty Input
- ☐ Student Input
- ☐ Accreditation/certification compliance
- ☑ Review of catalog information

Additional Comments: The following two new courses were added a few years ago to the catalog to replace this course:

- BIO 212: Elements of Microbiology
- BIO 213: Elements of Microbiology Laboratory

Acknowledgements and Attachments

What is the date that this course change was approved by departmental or program faculty?* 09/12/2024

IMPACT REPORT STATEMENT

At the top of the page, click on *Run Impact Report*. Copy the results of the Impact Report and paste into the space below.

Impact Report Results:*

Impact Report for BIO 210

Source: 2025-2026 Undergraduate Catalog	
Prerequisite:	BIO 508 - Environmental Microbiology
	BIO 511 - Immunology
	BIO 512 - Industrial Microbiology
	BIO 517 - Microbial Physiology and Metabolism
	BIO 520 - Pathogenic Microbiology
	DTN 338 - Food Safety Certification
Description	BIO 210 - Elements of Microbiology
	BIO 310 - Microbiology
Programs	Biology (Comprehensive) (BS)
	Biology (Non-Comprehensive) (BA)
	Biology (Non-Comprehensive) (BS)
	Biomedical Physics Certificate
	Chemistry (Comprehensive) (BS)
	Clinical Laboratory Sciences-Medical Technology (Comprehensive) (BS)
	Environmental Plant Science (Comprehensive) (BS)
	Foundations of Pharmaceutical Science Certificate

Acknowledgement Statement*

☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Catalog OID (Item ID) 47846

Catalog Status

◉ Active-Visible

○ Inactive-Hidden

Disposition Information

Effective Term

○ Fall

- [x] Spring
- [ ] Summer

Implementation Notes

Degree Audit Notes

Credit Hours: 3

Course Type Biology

Typically Offered:

- [x] Fall
- [ ] Fall Even
- [ ] Fall Odd
- [x] Spring
- [ ] Spring Even
- [ ] Spring Odd
- [ ] Summer
- [ ] Demand

BIO - 235 - Genetics

2025-2026 UG Course Change Form

General Catalog Information

Instructions

Complete Proposal Form

Complete all required fields, marked with an *.
Do not change the academic unit field.
Edit fields that need update by clicking on the text in the field. If a required field does not need to change, no need to update.
Generate the **Impact Report** by clicking *Run Impact Report* at the top of the page, select the UG catalog map, and copy the results into the space provided on the form. **This is required.**
Complete the *Acknowledgement* section.

Launch Proposal

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View uploaded files associated with the proposal by clicking the paperclip icon in the right-side

menu to access the *Files* tab.

The information imported for the course change is from the most recent catalog.
If changing the course number, originators must check course number availability prior to submission using this resource: Course Number Availability.
Parallel UG/GR courses must match exactly, except for prerequisites.
Identical courses must match exactly, including prerequisites.
Office of the Registrar will add standardized statements to all parallel and identical courses during implementation. Originators do not need to add these statements.
If a course is **not identical or parallel to another**, but students may not earn credit for a different course as well, the *"Cannot receive credit for both XXXxxx and XXXxxx""* must be added to the course description. *Example: LAW 335 and 532.*
Courses listed in prerequisites, corequisites, recommended prerequisites, and descriptions may be catalog links shown in green. Catalog links will be updated by the OOR during implementation.
Course changes that affect program information in the catalog will not be implemented without a corresponding program change form.
For system support, email curriculum@missouristate.edu.
For information regarding Faculty Senate bylaws, email facultysenate@missouristate.edu.

Academic Unit:*	Department of Biology
Course Code:*	BIO
Course Number:*	235
Course Title:*	Genetics
Prerequisite:	BIO 121 or BMS 110 and BMS 111; and CHM 116 and CHM 117 or CHM 160 and CHM 161 (recommended) or higher, and MTH 136 or higher.
Corequisite:	
Recommended Prerequisite:	
Credit Hours:*	3
Lecture Contact Hours:	3
Lab Contact Hours:	
If changing the repeatable hours or adding repeatable hours, enter the repeatable limit desired.	

Type (Lecture/Lab/Other)*

- (•) Lecture
- ( ) Lab
- ( ) Both
- ( ) Other

Grade Mode*

- (•) Letter Grades (Standard)
- ( ) Pass Not Pass ONLY
- ( ) CANNOT Pass Not Pass

Check all periodicity that applies.*

- [x] Fall
- [ ] Fall Even
- [ ] Fall Odd
- [x] Spring
- [ ] Spring Even
- [ ] Spring Odd
- [ ] Summer
- [ ] Demand

Course Description:*

Current course description in UG catalog to be replaced:

Principles of classical and molecular genetics, epigenetics and biotechnology. Course content is foundational to concepts of modern biology, recommended for all majors in life science-related fields.

Proposed new description in UG catalog:

Genetics is a unifying theme for all life sciences. This course provides an essential foundation for students proceeding to more advanced coursework in cell biology, microbiology, ecology and evolution. The course examines the genetic systems of eukaryotes, prokaryotes and viruses, and covers classical inheritance, genomics, chromosome functions and abnormalities, gene editing, and the molecular basis of cancer. The course also provides examples of applications to medicine, plant and animal breeding, biotechnology, and wildlife.

Is there a graduate parallel course to this one? No

Rationale

Why is this course changing?*	The catalog description of this course needs to be replaced with a narrative that more precisely describes the content and scope of the course. The need to make this change was determined by the BMS-Biology Working Group on Genetics. The new catalog description will help students better differentiate the courses Human Genetics offered by BMS and genetics offered by the Biology Depratment.
Does this change affect course assessment (e.g. student learning evidence / outcomes)?*	○ Yes ◉ No
If yes, explain:	
How was the change for this course determined?*	☐ Routine or annual review/assessment of curriculum ☑ Faculty Input ☐ Student Input ☐ Accreditation/certification compliance ☑ Review of catalog information ☐ Other
Other comments:	
What is the date that this course change was approved by departmental or program faculty?*	09/06/2024

Acknowledgements and Attachments

IMPACT REPORT STATEMENT

At the top of the page, click on *Run Impact Report*. Copy the results of the Impact Report and paste them into the space below.

Impact Report Results:*

Impact Report for BIO 235

Source: 2025-2026 Undergraduate Catalog	
Prerequisite:	BIO 236 - Genetics Laboratory
	BIO 310 - Microbiology
	BIO 312 - Microbiology
	BIO 320 - Cellular and Molecular Biology
	BIO 355 - Developmental Biology
	BIO 361 - General Physiology
	BIO 505 - Human Nature
	BIO 515 - Evolution
	BIO 540 - Applications of Molecular Markers
	BIO 550 - Statistical Methods for Biologists
	BIO 555 - Marine Ichthyology
	BIO 560 - Population Genetics and Evolutionary Mechanisms
	BMS 317 - Medical Microbiology
	CSC 587 - Computing for Bioinformatics
Description	BIO 236 - Genetics Laboratory
Programs	Animal Science (Comprehensive) (BS)
	Biology (Comprehensive) (BS)
	Biology (Non-Comprehensive) (BA)
	Biology (Non-Comprehensive) (BS)
	Biology Minor
	Biomedical Sciences (Comprehensive) (BS)
	Chemistry (Comprehensive) (BS)
	Clinical Laboratory Sciences-Medical Technology (Comprehensive) (BS)
	Data Science (Non-Comprehensive) (BS)
	Environmental Plant Science (Comprehensive) (BS)
	Exercise Science (Comprehensive) (BS)
	Foundations of Pharmaceutical Science Certificate
	Informatics Minor
	Molecular Biology Minor
	Paleontology Certificate
	Radiography (Comprehensive) (BS)

Acknowledgement Statement* ☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Catalog OID (Item ID) 47848

Catalog Status
- (•) Active-Visible
- ( ) Inactive-Hidden

Disposition Information

Effective Term
- ( ) Fall
- ( ) Spring
- ( ) Summer

Implementation Notes

Degree Audit Notes

Grade Mode for Catalog
- (•) Standard
- ( ) Pass/Not Pass

Schedule Type for Catalog Lecture

Course Type Biology

BIO - 310 - Microbiology

2025-2026 UG Course Delete Form

General Catalog Information

Instructions

Complete Proposal Form

Complete any required fields, marked with an *.
Do not edit any existing, pre-populated fields for this delete proposal.
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Launch Proposal

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If deleting an identical or parallel course, be sure to submit a corresponding delete or change course form to update the identical/parallel relationship with the other course(s).
If the deleted course is listed in catalog program information, a corresponding program change must be submitted. **Deleted courses are not automatically deleted from programs.**
For additional system support, email curriculum@missouristate.edu.
For information regarding Faculty Senate bylaws, email facultysenate@missouristate.edu.

Academic Unit:* Department of Biology

Course Code:* BIO

Course Number:* 310

Course Title:* Microbiology

Course Description:* Fundamental principles of microbiology; development of sound laboratory skills. A student who takes BIO 210 and BIO 310 receives credit toward graduation only for BIO 310.

Is this course a requirement in any program?* ○ Yes ◉ No

Rationale

Why is this course being deleted?* We replaced this course (BIO310) with two new courses by splitting the lecture and lab. Now, we have BIO312 (lecture) and BIO313 (lab) in the catalog, and this course (BIO310) should be deleted.

How was this determination made?*
- ☑ Routine or annual review/assessment of curriculum
- ☑ Faculty Input
- ☐ Student Input
- ☐ Accreditation/certification compliance
- ☑ Review of catalog information

Additional Comments: The following two courses were added to the catalog a few years ago to replace this course.

- BIO 312 - Microbiology
- BIO 313 - Microbiology Laboratory

Acknowledgements and Attachments

What is the date that this course change was approved by departmental or program faculty?* 09/08/2024

IMPACT REPORT STATEMENT

At the top of the page, click on *Run Impact Report*. Copy the results of the Impact Report and paste into the space below.

Impact Report Results:*

Prerequisite:	BIO 398 - Laboratory Internship in Biology
	BIO 508 - Environmental Microbiology
	BIO 511 - Immunology
	BIO 512 - Industrial Microbiology
	BIO 517 - Microbial Physiology and Metabolism
	BIO 518 - Regulatory Mechanisms
	BIO 520 - Pathogenic Microbiology
	BMS 524 - Virology
	BMS 530 - Cell Biology of Cancer
	BMS 540 - Biotechnology
Description	BIO 210 - Elements of Microbiology
	BIO 310 - Microbiology
Programs	Biology (Comprehensive) (BS)
	Biology (Non-Comprehensive) (BA)
	Biology (Non-Comprehensive) (BS)
	Biomedical Physics Certificate
	Biomedical Sciences (Comprehensive) (BS)
	Chemistry (Comprehensive) (BS)
	Clinical Laboratory Sciences-Medical Technology (Comprehensive) (BS)
	Environmental Plant Science (Comprehensive) (BS)
	Foundations of Pharmaceutical Science Certificate
	Human Genetics and Genomics Certificate
	Molecular Biology Minor
	Molecular Physiology Certificate

Acknowledgement Statement*

☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Catalog OID (Item ID) 47852

Catalog Status

◉ Active-Visible

○ Inactive-Hidden

Disposition Information

Effective Term

- ○ Fall
- ○ Spring
- ○ Summer

Implementation Notes

Degree Audit Notes

Credit Hours: 5

Course Type

Biology

Typically Offered:

- ☑ Fall
- ☐ Fall Even
- ☐ Fall Odd
- ☑ Spring
- ☐ Spring Even
- ☐ Spring Odd
- ☐ Summer
- ☐ Demand

BIO - 543 - Diabetes Pathology and Treatment

2025-2026 UG Course New Form

General Catalog Information

Instructions

Complete Proposal Form

Complete all required fields, marked with an *.
Only one academic unit may be selected.
Complete the *Acknowledgement* section.

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If a new course should be added to a program in the catalog (as a requirement or an elective, etc.), a program proposal must also be submitted.
For system support, email curriculum@missouristate.edu.
For information regarding Faculty Senate bylaws, email facultysenate@missouristate.edu.

Academic Unit:* Department of Biology

Course Code:* BIO

Course Number:* 543

Course Title:* Diabetes Pathology and Treatment

Prerequisite: BIO121 or BMS110 and BMS 111, and BIO235 (genetics) or BMS 230 (Human genetics)

Corequisite:

Recommended Prerequisite: BIO 320 (Cellular and Molecular Biology) or BMS 521 (Molecular Cell Biology) or equivalent

Credit Hours:* 3

Type (Lecture/Lab/Other):*
- (•) Lecture
- ( ) Lab
- ( ) Both
- ( ) Other

Lecture Contact Hours: 3

Lab Contact Hours:

If this course may be repeated for additional credit, enter the repeatable limit

limit.

This course CANNOT be graded as Pass/Not Pass. *
- (•) Yes
- ( ) Not Applicable

Is this course graded Pass/Not Pass ONLY? *
- ( ) Yes
- (•) Not Applicable

Is there a graduate parallel course to this one?
BIO 643

Is this course identical to another undergraduate course?
No

Check all periodicity that applies. *
- [x] Fall
- [ ] Fall Even
- [ ] Fall Odd
- [ ] Spring
- [ ] Spring Even
- [ ] Spring Odd
- [ ] Summer
- [ ] Demand

Course Description: *
To provide a better understanding of the underlying physiological and cellular mechanisms associated with Type I and Type II Diabetes. This course will consist of several introductory lectures covering the history and social content of diabetes, normal physiology of insulin, pathogenesis and treatment, and other health complications associated with diabetes followed by student presentations and discussion of recent primary research articles related to diabetes. The goal of this course is to provide a comprehensive and current perspective on this global pandemic.

Students cannot receive credit for both BIO 543 and BIO 643.

Rationale

Purpose of Course: *
This course will provide an additional undergraduate level course for students interested in a biomedical career including physicians, scientists, dentists, and other healthcare workers. In particular, this course will be included in the list of approved courses for biology majors seeking an emphasis in micobiology and biotechnology. Diabetes is a global pandemic and this course will provide a historical context as well as current research pertaining to the pathology and treatment of all forms of diabetes.

Enrollment Expectations

What is the anticipated source of students for this course?* Biology, BMS, chemistry and likely health-related majors may be interested in taking this course.

Anticipated Average Enrollment per class section:* 20

Maximum Enrollment Limit per class section:* 30

Anticipated Average Enrollment per semester: * 20

Maximum Enrollment Limit per semester:* 30

Anticipated Average Enrollment per year:* 20

Maximum Enrollment Limit per year:* 30

Resource Needs

Will this new course require additional library holdings?* ○ Yes ◉ No

Will this new course require additional computer resources?* ○ Yes ◉ No

Will this new course require additional or remodeled facilities?* ○ Yes ◉ No

Will this new course require additional equipment or supplies?* ○ Yes ◉ No

Will this new course require, additional travel funds?* ○ Yes ◉ No

Will there be any additional costs associate with this course?* ○ Yes ◉ No

If yes, to any of the above, detail specific resource needs:

Faculty Impact

Faculty Load Assignment (equated hours):* 3

Additional faculty ○ Yes

Additional faculty ○ Yes

needed; general vs. specialized*	Yes / No
needed; regular vs. per-course*	Yes / No

If additional faculty are not required, how will faculty be made available to teach this course?	I have been teaching this course as a BIO 597 special topics course.
List names of current faculty qualified and available to teach this course:*	Paul Durham
If from within the department, will students be taking this course in addition to or in place of other courses?*	Yes / No
If from outside the department, which courses in other departments would most likely be affected?*	This course is not currently being taught in another department that I am aware of.
Other comments:	Inclusion of this course as a class offereing for biology, biomedical, and healthcare students will be beneficial for their preparation for advanced degree programs. In Biology, it will provide another course for the general biology degree and microbiology and biotechnology degree programs. *Students cannot receive credit for both BIO 543 and BIO 643.*

Acknowledgements and Attachments

What is the date that this new course was approved by departmental faculty?*	09/06/2024

ATTACHMENT INSTRUCTION

No attachments are required but may be uploaded if desired by navigating to the right side menu and clicking "*Files*".

Note: A syllabus is not required.

Acknowledgement Statement*

☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Disposition Information

Effective Term

- ○ Fall
- ○ Spring
- ○ Summer

Implementation Notes

Degree Audit Notes

Grade Mode for Catalog

- ○ Standard
- ○ Pass/Not Pass

Schedule Type for Catalog

Course Type:

BIO - 545 - Comparative Endocrinology

2025-2026 UG Course New Form

General Catalog Information

Instructions

Complete Proposal Form

Complete all required fields, marked with an *.
Only one academic unit may be selected.
Complete the *Acknowledgement* section.

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Identical courses must match exactly, including prerequisites.
Office of the Registrar will add standardized statements to all parallel and identical courses during implementation. Originators do not need to add these statements.
If a course is **not identical or parallel to another**, but students may not earn credit for a different course as well, the *"Cannot receive credit for both XXXxxx and XXXxxx""* must be added to the course description. *Example: LAW 335 and 532.*
If a new course should be added to a program in the catalog (as a requirement or an elective, etc.), a program proposal must also be submitted.
For system support, email curriculum@missouristate.edu.
For information regarding Faculty Senate bylaws, email facultysenate@missouristate.edu.

Academic Unit:* Department of Biology

Course Code:* BIO

Course Number:* 545

Course Title:* Comparative Endocrinology

Prerequisite: BIO 320 or BIO 361 or BMS 308

Corequisite:

Recommended Prerequisite:

Credit Hours:* 3

Type (Lecture/Lab/Other):* (•) Lecture ( ) Lab ( ) Both ( ) Other

Lecture Contact Hours: 3

Lab Contact Hours: 0

If this course may be repeated for additional credit, enter the repeatable limit.

This course CANNOT be graded as Pass/Not Pass. *
- ( ) Yes
- (•) Not Applicable

Is this course graded Pass/Not Pass ONLY? *
- ( ) Yes
- (•) Not Applicable

Is there a graduate parallel course to this one?
BIO 645

Is this course identical to another undergraduate course?

Check all periodicity that applies. *
- [ ] Fall
- [ ] Fall Even
- [x] Fall Odd
- [ ] Spring
- [ ] Spring Even
- [ ] Spring Odd
- [ ] Summer
- [ ] Demand

Course Description: *
Explores the fundamental principles of vertebrate endocrinology while providing a comparative context across animal species. Emphasizes understanding hormonal regulation of physiological processes with an integrative approach that explores mechanisms from molecules to whole-animal endocrine regulation.

Rationale

Purpose of Course: *
The purpose of this course is to provide students with an understanding of vertebrate endocrinology through a comparative approach. By examining the hormonal regulation of physiological processes across diverse animal species, students will gain insight into the evolutionary adaptations and conserved mechanisms of endocrine function. The course will integrate molecular, cellular, and whole-animal perspectives, offering students a deeper appreciation of how endocrine systems influence metabolism, reproduction, growth, and behavior. This course is designed to foster critical thinking and scientific inquiry, equipping students with the skills necessary to analyze and interpret endocrine-related phenomena in a broad biological context.

Enrollment Expectations

Enrollment Expectations

What is the anticipated source of students for this course?*

I anticipate attracting students from the Department of Biology, College and Agriculture, and Department of Biomedical Sciences. Due to its integrative nature, it is suitable for students with diverse interests in biology, including cellular biology, human and non-human physiology and medicine, and wildlife biology.

Anticipated Average Enrollment per class section:* 15

Maximum Enrollment Limit per class section:* 24

Anticipated Average Enrollment per semester: * 15

Maximum Enrollment Limit per semester:* 24

Anticipated Average Enrollment per year:* 15

Maximum Enrollment Limit per year:* 24

Resource Needs

Will this new course require additional library holdings?* ○ Yes ◉ No

Will this new course require additional computer resources?* ○ Yes ◉ No

Will this new course require additional or remodeled facilities?* ○ Yes ◉ No

Will this new course require additional equipment or supplies?* ○ Yes ◉ No

Will this new course require, additional travel funds?* ○ Yes ◉ No

Will there be any additional costs associate with this course?* ○ Yes ◉ No

If yes, to any of the above, detail specific resource needs:

Faculty Impact

Faculty Load Assignment (equated hours):* 3

Additional faculty needed: general vs ○ Yes

Additional faculty needed: regular vs ○ Yes

needed, general vs. specialized*	No
needed, regular vs. per-course*	No

If additional faculty are not required, how will faculty be made available to teach this course?	I have previously taught this class as a variable topics course. In years past I taught another course in odd fall semesters called Comparative Animal Physiology. Due to lower enrollment potential for that class, I intend to replace it in my teaching schedule with Comparative Endocrinology, which has broader appeal across multiple disciplines.
List names of current faculty qualified and available to teach this course:*	Day Ligon
If from within the department, will students be taking this course in addition to or in place of other courses?*	(•) Yes ( ) No
If from outside the department, which courses in other departments would most likely be affected?*	The course that I've proposed likely most closely aligns with BMS 573, titled Endocrine Physiology. However, I have found no evidence that this course has been offered since it was added to the course catalog in 2018, so a direct comparison isn't feasible. The proposed course may also have limited overlap with courses in Animal Science, such as AGS 302 (Reproductive Physiology) but is designed to be broader in scope and to focus specifically on endocrine signaling.
Other comments:	Although not required, I have included a syllabus from a recent semester when this course was offered as a Variable Topics (BIO 597) class.

Acknowledgements and Attachments

What is the date that this new course was approved by departmental faculty?*	09/06/2024

ATTACHMENT INSTRUCTION

No attachments are required but may be uploaded if desired by navigating to the right side menu and clicking "*Files*".

Note: A syllabus is not required.

Acknowledgement Statement*	☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Disposition Information

Effective Term

- ○ Fall
- ○ Spring
- ○ Summer

Implementation Notes

Degree Audit Notes

Grade Mode for Catalog

- ○ Standard
- ○ Pass/Not Pass

Schedule Type for Catalog

Course Type:

BIO - 571 - Comparative Animal Physiology

2025-2026 UG Course Delete Form

General Catalog Information

Instructions

Complete Proposal Form

Complete any required fields, marked with an *.
Do not edit any existing, pre-populated fields for this delete proposal.
Generate the Impact Report by clicking *Run Impact Report* at the top of the page,select the UG catalog map, and copy the results into the space provided on the form. This is required.
Complete the *Acknowledgement* section.

Launch Proposal

Launch proposal by clicking *Validate and Launch* at the top or bottom of the proposal. If all required fields are completed, the proposal will launch into the workflow approval process. If required fields have not been completed, a list of the missing fields will be provided. Those fields must be completed before the proposal is launched again.
Once the proposal has been launched, originators must follow the steps below to "approve" the proposal.

Approve Proposal

Make a decision (approve) by clicking the *Decisions* tab using the check mark icon in the right-side menu. The proposal is NOT submitted until the originator approves the proposal first.
If needed, comment on the proposal by clicking the *Discussion* tab using the chat icon in the right-side menu and clicking the + *Add Comment* button. Comments can be added to the proposal at any time.

To Review Proposal (After Launch)

View changes to the proposal by clicking the *Discussion* tab using the chat icon in the right-side menu and selecting *"Show current with markup"* on the *User Tracking* dropdown.
View current comments concerning this proposal by clicking the *Discussion* tab using the chat icon in the right-side menu.
View the history of the proposal by clicking the *Workflow Status* tab using the bullet list icon in the right-side menu.
View uploaded files associated with the proposal by clicking the paperclip icon in the right-side menu to access the *Files* tab.

The information imported for this course deletion is from the most recent catalog.
If deleting an identical or parallel course, be sure to submit a corresponding delete or change course form to update the identical/parallel relationship with the other course(s).
If the deleted course is listed in catalog program information, a corresponding program change must be submitted. Deleted courses are not automatically deleted from programs.
For additional system support, email curriculum@missouristate.edu.
For information regarding Faculty Senate bylaws, email facultysenate@missouristate.edu.

Academic Unit:* Department of Biology

Course Code:* BIO

Course Number:* 571

Course Title:* Comparative Animal Physiology

Course Description:* Organ/system function in a wide range of invertebrate and vertebrate animals. May be taught concurrently with BIO 671. Cannot receive credit for both BIO 571 and BIO 671.

Is this course a requirement in any program?* ○ Yes ◉ No

Rationale

Why is this course being deleted?* BIO 571, which historically was taught in alternate springs, has not been offered for several cycles due to low enrollment potential.

How was this determination made?* ☑ Routine or annual review/assessment of curriculum ☐ Faculty Input ☐ Student Input ☐ Accreditation/certification compliance ☐ Review of catalog information

Additional Comments:

Acknowledgements and Attachments

What is the date that this course change was approved by departmental or program faculty?*	09/06/2024

IMPACT REPORT STATEMENT

At the top of the page, click on *Run Impact Report*. Copy the results of the Impact Report and paste into the space below.

Impact Report Results:*

Impact Report for BIO 571

There are no results for this report.

Acknowledgement Statement* ☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Catalog OID (Item ID)	47899
Catalog Status	◉ Active-Visible ○ Inactive-Hidden
Disposition Information	
Effective Term	○ Fall ○ Spring ○ Summer
Implementation Notes	
Degree Audit Notes	
Credit Hours:	4
Course Type	Biology

Typically Offered:

- [ ] Fall
- [ ] Fall Even
- [ ] Fall Odd
- [ ] Spring
- [ ] Spring Even
- [x] Spring Odd
- [ ] Summer
- [ ] Demand

Biology (Comprehensive) (BS)

2025-2026 UG Program Change Form

General Catalog Information

Instructions

Complete Proposal Form

Complete all required fields, marked with an *.
Do not change the academic unit field.
Edit fields that need update by clicking on the text in the field. If a required field does not need to change, no need to update.
Complete the *Acknowledgement* section.

Launch Proposal

Launch proposal by clicking *Validate and Launch* at the top or bottom of the proposal. If all required fields are completed, the proposal will launch into the workflow approval process. If required fields have not been completed, a list of the missing fields will be provided. Those fields must be completed before the proposal is launched again.
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To Review Proposal (After Launch)

View changes to the proposal by clicking the *Discussion* tab using the chat icon in the right-side menu and selecting *"Show current with markup"* on the *User Tracking* dropdown.
View current comments concerning this proposal by clicking the *Discussion* tab using the chat icon in the right-side menu.
View the history of the proposal by clicking the *Workflow Status* tab using the bullet list icon in the right-side menu.
View uploaded files associated with the proposal by clicking the paperclip icon in the right-side menu to access the *Files* tab.

New courses (currently not in the catalog) must be submitted in Curriculog *before* completing this change program process, if the new courses are to be included in this change program proposal.

Select *Program* below as the *Type of Program* before importing curriculum data. DO NOT select Shared Core.

Type of Program* (•) Program ( ) Shared Core

Academic Unit* Department of Biology

Choose One:* (•) Comprehensive Undergraduate Major ( ) Non-Comprehensive Undergraduate Major ( ) Undergraduate Major (not a BS or BA degree) ( ) Minor ( ) Certificate

Does this program have options?* ( ) Yes (•) No

Program Title* Biology (Comprehensive) (BS)

Degree Type* Bachelor of Science

Additional Catalog Information* none

Rationale

What is the date that this program change was approved by department or program faculty?* 04/05/2024

Why is this program changing?* This change is to the Wildlife and Fisheries option. SEES has submitted changes for GLG 110 (to GLG 113 and GLG 116), GLG 171 (to GLG 114), and GRY 142 (to GRY 145), and we are making changes to reflect forthcoming course numbers. At the recommendation of Toby Dogwiler, we are making a change to GLG 114, as this course will be more relevant to our students, but we are not including the lab as this is not consistent with the other requirements.

Catalog Curriculum Information

Follow these steps to update curriculum:

Step 1-Preview Curriculum or View Curriculum Schema

These views will show the current curriculum structure and courses.

Step 2-Remove courses or cores (sections), if needed

A *core* in Curriculog is defined as a section of the program in the catalog.
Use the *"trashcan icons"* to delete an entire core/section or to delete existing courses.

Step 3-Change cores (sections), if needed

Expand a core/section to update the title, description, or custom text.
Move or rearrange a core/section by dragging and dropping, using the 4 headed arrow. Moving a core/section under another will produce a "sub-core".

Step 4-Adding Courses

The first step is to bring courses into the proposal to use when building out the desired program requirements and sections.
On the *"View Curriculum Courses"* tab, there are two options for adding courses: *"Add Course"* and *"Import Course."*
For courses already in the catalog, click on *"Import Course"* and find the courses needed.
For new courses currently going through a Curriculog Approval Process click on *"Add Course"*.
A box will open asking you for the Prefix, Course Number and Course Title. Be sure this information matches the new course prefix/number/title exactly.
To remove a course that was added into the proposal but no longer needed, click on the *"trashcan icon"* to delete.

Step 5-Adding Sections

Click on *"View Curriculum Schema"* then select *"Add Core"*. When the new core (section) appears, expand and enter a title. Title examples: "*Specific General Education Requirements*" or "*Required Courses*", or "*Capstone Experience*".
Enter a description, if applicable.
Add courses (from the steps above) to the section(s), as needed.
Add custom text, if applicable. Custom text examples: *"3 hours from"*, or *"any additional course numbered 300 or above"*, or adding *"or"* between a choice of courses.
Move or rearrange a core/section by dragging and dropping, using the 4 headed arrow. Moving a core/section under another will produce a "sub-core".

Step 6-Preview Curriculum

This preview will show the structure of the sections and courses added to this proposal.
This is available at any point during the building of this proposal.

Note: The Office of the Registrar will format this program in the catalog appropriately, as needed.

Curriculum*

Major Requirements

Major Core:

Consult options below before selecting courses.

BIO 121 General Biology I	**4**
BIO 122 General Biology II	**4**
BIO 235 Genetics	**3**
BIO 236 Genetics Laboratory	**1**
BIO 302 Biology Seminar	**1**
BIO 492 Biology Program Assessment	**0**
BIO 550 Statistical Methods for Biologists	**3**
[After]	
PHY 123 Introduction to Physics I	**4**
[After] OR	
PHY 203 Foundations of Physics I	**5**
[After]	
PHY 124 Introduction to Physics II	**4**
[After] OR	
PHY 204 Foundations of Physics II	**5**
[After]	
MTH 137 Precalculus 2	**3**
[After] OR	
MTH 138 Pre-Calculus Mathematics	**5**
[After] OR	
[After] eligibility for MTH 261 on mathematics placement test.	
[After]	
BIO 312 Microbiology	**3**
[Right] AND	
BIO 313 Microbiology Laboratory	**2**
[After] OR	
BIO 320 Cellular and Molecular Biology	**4**
[After] OR	
BIO 361 General Physiology	**4**
[After] OR	
BIO 544 Plant Physiology	**4**
[After]	
CHM 116 Fundamentals of Chemistry	**4**
[Right] AND	
CHM 117 Fundamentals of Chemistry Laboratory	**1**
[After] OR	

CHM 160 General Chemistry I	4
[Right] AND	
CHM 161 General Chemistry I Laboratory	1
[After]	
CHM 201 Essentials of Organic Chemistry	3
[Right] AND	
CHM 202 Essentials of Organic Chemistry Laboratory	2
[After] OR	
CHM 302 Introduction to Analytical Chemistry	5
[After] OR	
CHM 342 Organic Chemistry I	3
[After] OR	
CHM 343 Organic Chemistry II	3

Public Affairs Capstone Experience will be fulfilled by completion of:

BIO 302 Biology Seminar	1
BIO 492 Biology Program Assessment	0

Two Additional Courses From the Following:

Courses may also be used to satisfy option requirements.

BIO 300 Service-Learning in Biology	1
BIO 355 Developmental Biology	4
BIO 367 General Ecology	3
BIO 370 Invertebrate Zoology	4
BIO 373 Principles of Wildlife Management	3
BIO 398 Laboratory Internship in Biology	1
BIO 399 Cooperative Education in Biology	1-3
BIO 485 Marine Conservation	3
BIO 498 Honors Senior Project	3
BIO 499 Undergraduate Research	1-3
BIO 501 Natural History Museum Techniques	2
BIO 505 Human Nature	3
BIO 508 Environmental Microbiology	3
BIO 509 Stream Ecology	4
BIO 511 Immunology	4
BIO 512 Industrial Microbiology	3
BIO 520 Pathogenic Microbiology	3
BIO 527 Field Biology	1-4
BIO 539 Biogeography	3
BIO 547 Water Resources	3
BIO 561 Environmental Issues Education and Interpretation	2

BIO 573 Ornithology	3
BIO 574 Aquatic Entomology	2
BIO 575 Ichthyology	3
BIO 576 Herpetology	3
BIO 577 Mammalogy	3
BIO 578 Behavioral Ecology	4
BIO 579 Conservation Biology	3
BIO 584 Fish Ecology	3
BIO 589 Game Management	3

University Level Requirements:

General Education Program and Requirements

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, BIO 399, BIO 499, or BIO 597.

Pre-Teacher Education Option

This option is designed for students preparing to enter post-graduate studies to become a high school science teacher. 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.

BIO 312 Microbiology	3
BIO 313 Microbiology Laboratory	2
BIO 361 General Physiology	4
BIO 367 General Ecology	3
BIO 368 General Ecology Lab	1
BIO 515 Evolution	3

Nine Additional Hours of Upper Division Biology Courses.

Related Chemistry Courses:

CHM 160 General Chemistry I	**4**
CHM 161 General Chemistry I Laboratory	**1**
CHM 170 General Chemistry II	**3**
CHM 171 General Chemistry II Laboratory	**1**
[After]	
CHM 201 Essentials of Organic Chemistry	**3**
[Right] AND	
CHM 202 Essentials of Organic Chemistry Laboratory	**2**
[After] OR	
CHM 302 Introduction to Analytical Chemistry	**5**

Related Science Courses:

GLG 110 Principles of Geology	**4**
GRY 135 Principles of Weather and Climate	**4**
SCI 505 Intellectual Foundations of Science and Technology	**3**

Related Mathematics Requirement: One course from:

MTH 137 Precalculus 2	**3**
[After] OR	
[After] eligibility for MTH 261 on Mathematics Placement test.	

Total Credit Hours: 72-74

Environmental Biology and Evolution Option

BIO 367 General Ecology	**3**
BIO 368 General Ecology Lab	**1**
BIO 515 Evolution	**3**

One Course in Biodiversity and Evolution:

BIO 334 Plant Taxonomy	**3**
BIO 339 Identification of Woody Plants	**2**
BIO 370 Invertebrate Zoology	**4**
BIO 371 Introduction to Entomology	**3**
BIO 380 Comparative Vertebrate Anatomy	**5**
BIO 530 Aquatic Botany	**3**
BIO 571 Comparative Animal Physiology	**4**
BIO 573 Ornithology	**3**
BIO 574 Aquatic Entomology	**2**
BIO 575 Ichthyology	**3**
BIO 576 Herpetology	**3**
BIO 577 Mammalogy	**3**

The Following Courses Taught During the Summer

at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi:

BIO 534 Coastal Vegetation	**2**
BIO 535 Coastal Vegetation Lab	**1**
BIO 555 Marine Ichthyology	**3**
BIO 556 Marine Ichthyology Lab	**3**
BIO 587 Marine Invertebrate Zoology	**3**
BIO 588 Marine Invertebrate Zoology Lab	**3**

One course in Population Biology:

BIO 436 Plant Ecology	**4**
BIO 505 Human Nature	**3**
BIO 532 Principles of Fisheries Management	**3**
BIO 540 Applications of Molecular Markers	**4**
BIO 560 Population Genetics and Evolutionary Mechanisms	**3**
BIO 563 Population Ecology	**3**
BIO 567 Physiological Ecology	**4**
BIO 578 Behavioral Ecology	**4**
BIO 584 Fish Ecology	**3**
BIO 589 Game Management	**3**

The following courses taught during the summer

at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi:

BIO 557 Marine Fisheries Management	2
BIO 558 Marine Fisheries Management Lab	2

Three Hours in Community/Ecosystem Biology:

BIO 373 Principles of Wildlife Management	3
BIO 485 Marine Conservation	3
BIO 504 Plant-Animal Interactions	3
BIO 508 Environmental Microbiology	3
BIO 509 Stream Ecology	4
BIO 533 Wetland Ecology	4
BIO 539 Biogeography	3
BIO 547 Water Resources	3
BIO 562 Limnology	4
BIO 564 Ozarks Natural Communities	2
BIO 579 Conservation Biology	3

The Following Courses Taught During the Summer

at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi:

BIO 537 Salt Marsh Plant Ecology	2
BIO 538 Salt Marsh Plant Ecology Lab	2
BIO 565 Marine Ecology	3
BIO 566 Marine Ecology Lab	2

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 Plant Taxonomy	3
BIO 339 Identification of Woody Plants	2
BIO 370 Invertebrate Zoology	4
BIO 436 Plant Ecology	4
BIO 509 Stream Ecology	4
BIO 527 Field Biology	1-4
BIO 562 Limnology	4

BIO 564 Ozarks Natural Communities	**2**
BIO 574 Aquatic Entomology	**2**
BIO 575 Ichthyology	**3**
BIO 576 Herpetology	**3**
BIO 577 Mammalogy	**3**

[After] any biology course taught at the Gulf Coast Research Laboratory

[After] any biology course taught at the Bull Shoals Field station or another field station (with the approval of advisor)

Zero to Eight Hours of Elective BIO Courses

at the level of 300 or higher to total a minimum of 43 hours in biology.

One of the Following Mathematics, Statistics, or Computer Programming Courses:

MTH 261 Analytic Geometry and Calculus I	**5**
MTH 287 Computational Calculus with Analytic Geometry I	**3**
CSC 125 Introduction to C++ Programming	**4**
CSC 130 The World of Computer Science	**3**
CSC 587 Computing for Bioinformatics	**3**
BIO 551 Experimental Design for Biologists	**2**
PSY 527 Advanced Psychological Statistical Methods	**3**

Related Requirements in Chemistry:

CHM 160 General Chemistry I	**4**
CHM 161 General Chemistry I Laboratory	**1**
CHM 170 General Chemistry II	**3**
CHM 171 General Chemistry II Laboratory	**1**

One of the Following Related Science Courses:

AGN 215 Soils	**3**
ANT 305 Introduction to Archaeology	**3**
ANT 375 Human Evolution	**3**

[After]	
CHM 260 Principles of Environmental Chemistry	**3**
[After] OR	
CHM 460 Environmental Chemistry: Water and Land	**3**
[After]	
GLG 114 Earth: The Survival Guide	**3**
GRY 351 Sustainable Management of Natural Resources	**3**

One of the Following Related Fields of Study Courses:

BIO 561 Environmental Issues Education and Interpretation	**2**
ECO 540 Environmental, Resource, and Energy Economics	**3**
GEO 363 Introduction to Geographic Information Science	**4**
LAW 537 Environmental Regulation	**3**
PHI 302 Environmental Ethics	**3**
PLS 555 Public Policy for a Global Environment	**3**
PSY 379 Environmental Psychology	**3**

Total Credit Hours: 72-85

Microbiology and Biotechnology Option

BIO 312 Microbiology	**3**
BIO 313 Microbiology Laboratory	**2**
BIO 320 Cellular and Molecular Biology	**4**

21 additional hours in BIO courses

with a minimum of 18 hours from the following. BMS 524(3) may be substituted for one of these courses. CHM 302(5); or CHM 502(3) and 503(2); or CHM 504(3) and 505(1) may be substituted for one of these courses.

BIO 355 Developmental Biology	**4**
BIO 508 Environmental Microbiology	**3**
BIO 511 Immunology	**4**
BIO 512 Industrial Microbiology	**3**

[After]	
BIO 505 Human Nature	**3**
[After] OR	
BIO 515 Evolution	**3**
[After]	
BIO 517 Microbial Physiology and Metabolism	**4**
BIO 518 Regulatory Mechanisms	**2**
BIO 520 Pathogenic Microbiology	**3**
BIO 530 Aquatic Botany	**3**
BIO 540 Applications of Molecular Markers	**4**

Related Requirements in Chemistry:

CHM 160 General Chemistry I	**4**
CHM 161 General Chemistry I Laboratory	**1**
CHM 170 General Chemistry II	**3**
CHM 171 General Chemistry II Laboratory	**1**
[After]	
CHM 201 Essentials of Organic Chemistry	**3**
[Right] AND	
CHM 202 Essentials of Organic Chemistry Laboratory	**2**
[After] OR	
CHM 342 Organic Chemistry I	**3**
[Right] AND	
CHM 345 Microscale Organic Chemistry Laboratory	**2**
[Right] AND	
CHM 343 Organic Chemistry II	**3**
[After] OR	
[After] CHM 342 - Organic Chemistry I **AND**	
[After] CHM 345 - Microscale Organic Chemistry Laboratory	
[After]	
CHM 352 Introduction to Biochemistry	**3**
[After] OR	
CHM 554 Biochemistry I	**3**
[After] AND	
CHM 556 Biochemistry II	**3**

Total Credit Hours: 71-87

Wildlife and Fisheries Biology Option

BIO 320 Cellular and Molecular Biology	4
[After] OR	
BIO 361 General Physiology	4
[After]	
BIO 367 General Ecology	3
BIO 368 General Ecology Lab	1

Two Courses in Plant Biology From:

BIO 334 Plant Taxonomy	3
BIO 339 Identification of Woody Plants	2
BIO 530 Aquatic Botany	3
BIO 544 Plant Physiology	4

Three Courses in Animal Biology From:

BIO 370 Invertebrate Zoology	4
BIO 371 Introduction to Entomology	3
BIO 380 Comparative Vertebrate Anatomy	5
BIO 571 Comparative Animal Physiology	4
BIO 573 Ornithology	3
BIO 574 Aquatic Entomology	2
BIO 575 Ichthyology	3
BIO 576 Herpetology	3
BIO 577 Mammalogy	3

Five Hours in Management From:

BIO 373 Principles of Wildlife Management	3
BIO 485 Marine Conservation	3
BIO 509 Stream Ecology	4
BIO 532 Principles of Fisheries Management	3
BIO 533 Wetland Ecology	4
BIO 562 Limnology	4
BIO 589 Game Management	3

Two Courses in Ecology and Evolution From:

BIO 436 Plant Ecology	4

BIO 504 Plant-Animal Interactions	3
BIO 515 Evolution	3
BIO 539 Biogeography	3
BIO 563 Population Ecology	3
BIO 567 Physiological Ecology	4
BIO 578 Behavioral Ecology	4
BIO 579 Conservation Biology	3
BIO 584 Fish Ecology	3

One Course in Human Dimensions From:

AGN 335 Soil Conservation and Water Management	3
BIO 547 Water Resources	3
BIO 561 Environmental Issues Education and Interpretation	2
CRM 210 Introduction to the American Criminal Justice System	3
ECO 540 Environmental, Resource, and Energy Economics	3
GRY 108 Principles of Sustainability	3
GRY 351 Sustainable Management of Natural Resources	3
PHI 302 Environmental Ethics	3
PLS 555 Public Policy for a Global Environment	3
LAW 537 Environmental Regulation	3

One Course in Earth/Environmental Science From:

AGN 215 Soils	3
CHM 260 Principles of Environmental Chemistry	3
GLG 114 Earth: The Survival Guide	3
GRY 145 Earth's Natural Environment	3

Total Credit Hours: 68-87

Acknowledgements

Acknowledgement Statement* ☑ I acknowledge that all areas of this proposal have been completed as required.

System Administrator Only

Catalog OID (Item ID) 4632

Catalog Status
- (•) Active-Visible
- ( ) Active-Hidden
- ( ) Inactive-Hidden

Program Type Majors

Disposition Information

Effective Term
- ( ) Fall
- ( ) Spring
- ( ) Summer

Implementation Notes

Degree Audit Notes