To: Faculty Curriculum Committee  
From: Melissa Hughes, Professor, Department of Biology  
  hughesm@cofc.edu  
Re: Proposed changes to BIOL 343 and BIOL 343L, and associated changes to Biology majors

BIOL 343 (Animal Behavior) is a 4-credit course with an associated, required laboratory section (BIOL 343L, Animal Behavior Lab); BIOL 343L is a 0-credit lab course that can only be taken in association with BIOL 343. Here I propose to “unlink” the lecture and lab components: (1) change BIOL 343 to a 3-credit course with no requirement with regard to the lab section; (2) change BIOL 343L to a 1-credit course with BIOL 343 as a pre- or co-requisite.

In addition, BIOL 343 is currently listed as an elective within all Biology majors but BIOL 343L (since it is currently taken as part of BIOL 343) is not specifically listed; thus this proposal also includes “Change of Major” forms, adding BIOL 343L to the lists of electives in each. The end result will be to maintain the status quo: student in Biology taking both BIOL 343 and 343L will receive the same credit towards their major requirements as they do currently.

BIOL 343 is also an elective in 2 programs outside of Biology (the Neuroscience Minor, Physics Computational Neuroscience Concentration) and is in the process of being added to the list of electives for Women’s and Gender Studies; the lab component is not essential to any of these programs (in fact, making the lab optional will likely make the course more accessible to students in these programs), and letters from the directors of all three programs acknowledging this change are included here.

Rationale: BIOL 343 is currently in high demand but access is limited due to necessary enrollment caps in the lab section; student lacking priority enrollment are rarely able to enroll in the course prior to their senior year (and sometimes are unable to do so even then). By unlinking the lecture and lab components, I hope to: (1) increase access to the course for students earlier in their degree programs; (2) increase student curricular flexibility (especially for students – both in Biology and other degree programs – who need additional elective credits but do not need additional lab credits); (3) improve overall laboratory experience (as a cohort of students in lab will have completed the lecture component, promoting peer-to-peer learning in the lab and increasing the overall level of discussion, hypothesis generation and analysis).

The enclosed proposal includes the following:

A. Change of course form, BIOL 343
B. Change of course form, BIOL 343L
C. Change of major/program form, add BIOL 343L: Biology BS
D. Change of major/program form, add BIOL 343L: Biology BA
E. Change of major/program form, add BIOL 343L: Marine Biology BS
F. Change of major/program form, add BIOL 343L: Biology BS with concentration in Molecular Biology
G. Letter acknowledging change: Neuroscience Minor
H. Letter acknowledging change: Physics, Computational Neuroscience concentration
I. Letter acknowledging change: Women’s and Gender Studies
J. Signature page
A. Change BIOL 343

FACULTY CURRICULUM COMMITTEE
COURSE FORM

Instructions:
- Please fill out one of these forms for each course you are adding, changing, deactivating, or reactivating.
- Fill out the parts of the form specified in part B. **You must do this before your request can move forward!**
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, start by checking the instructions on the website. Please feel free to contact the committee chairs with any remaining questions you might have.

A. CONTACT/COURSE INFORMATION.

Name: Melissa Hughes    Phone: 953-6557    Email: hughesm@cofc.edu

Department or Program: BIOL    School: SSM

Subject Acronym and Course Number: BIOL 343 (Animal Behavior)

Catalog Year in which changes will take effect: FALL __2015____

B. TYPE OF REQUEST. Please check all that apply, then fill out the specified parts of the form.

☐ Add a New Course (complete parts C, D, F, G, H, I, J)
☒ Change Part of an Existing Course (complete parts C, D, E, F, G, I, J)

☐ Course Number (you must submit a course deactivation request for the old course number)
☐ Course Name
☐ Course Description
☒ Credit/Contact Hours
☒ Restrictions (prerequisites, co-requisites, junior/senior standing, etc.)
☐ Deactivate an Existing Course (complete parts C, D, E, G, I, J)
☐ Reactivate a Previously-Deactivated Course (complete parts C, D, E, G, I, J)

C. RATIONALE AND EXPLANATION. Please describe your request and explain why you are making it.

Currently, this course is 4 credits, including a required lab section (students must register separately for a lab section: BIOL 343L; BIOL 343L is currently a 0-credit lab course that must be taken concurrently with BIOL 343).

The proposed changes are as follows: reduce BIOL 343 to 3 credits, and remove the requirement to concurrently take a lab section (a separate request will be submitted to change the lab section to a 1-credit class, with the lecture section as a pre- or co-requisite). In other words, the currently required lab section will be changed to an optional lab section, which may be taken either concurrently with the lecture, or in subsequent semesters.

Rationale: The first rationale for this change is simply to make BIOL 343 available to more students: lab sections have necessarily limited enrollment; however, demand for the lecture portion of the course is high and students without priority registration typically cannot access the course until their senior year. Second, the subject matter of this course — the function, evolution, and underlying mechanisms of behavior - integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing an integrative basis for students seeking more specialized coursework in any one of these areas. Separating the lecture and lab components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them. Finally, having a cohort of students in BIOL 343 who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

This form was last updated on 12/13/13 and replaces all others.
D. IMPACT ON EXISTING PROGRAMS AND COURSES. Please briefly describe the impact of your request on your own programs and courses as well other programs and courses. If another program requires the course, you must submit their written acknowledgement with this proposal. Also, the affected program must describe any change in the number of credit hours they require. Include a list of similar courses in other departments and explain any overlap.

BIOL 343 is currently listed as an elective in all Biology majors (BS Biology, BA Biology, BS Marine Biology, BS Biology with Teaching Option, BS Biology with concentration in Molecular Biology). For all except BS Biology with Teaching Option (discussed below), BIOL 343 applies both an elective credit hour at 300 or above requirement, and a 300 or above lab requirement in these majors. With the proposed change, BIOL 343 will continue to apply to the elective credit hour requirement, and BIOL 343L will apply to both the credit hour and lab requirement (“Change of Program” forms to add BIOL 343L to the list of electives are included here). For a student who takes both lecture and lab, there will be no change from the current situation (4 credit hours of elective and 1 lab). Students who do not need an additional lab to meet their requirements will now be able to take BIOL 343 without the lab for elective credit hours only.

For BS Biology with Teaching Option, BIOL 343 is currently listed as an organismal elective (elective class focusing on biology at the level of the organism); students are required to take at least one organismal elective, but there is no specific requirement for credit hours or labs for this category of elective. Thus BIOL 343 will continue to be listed as an elective in this program; no changes to this program are proposed at this time.

BIOL 343 is also an elective in the Neuroscience Minor, and the Physics Computational Neuroscience program. Removing the lab requirement from BIOL 343 is likely to increase access to this course for students in these programs, as they do not have specific Biology lab elective requirements. Letters are included here from the directors of both programs acknowledging the proposed change.

Finally, BIOL 343 is in the process of being added to the list of electives for the Women’s and Gender Studies program (it has been approved for the program but has not yet been added to the catalog). As above, removing the lab requirement is likely to increase access to this course for students in WGS, and a letter from the director is included here as well.
E. EXISTING COURSE INFORMATION. If you are proposing a new course, just leave this blank. Otherwise, please fill out all fields.

Department: Biology  
School: SSM  
Subject Acronym: BIOL  
Course Number: 343

Credit hours: ___ lecture ___ lab ___ seminar ___ independent study
Contact hours: ___ lecture ___ lab ___ seminar ___ independent study

Course title: Animal Behavior

Course description (maximum 50 words, exactly as it appears in the catalog):

An introduction to the mechanisms and evolution of behavior in vertebrate and invertebrate animals. Lectures three hours per week; laboratory three hours per week.

Restrictions (pre-requisites, co-requisites, majors only, etc.):
Prerequisites: BIOL 111/111L, BIOL 112/112L, BIOL 211/211D, and BIOL 305.

Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor.
Note: BIOL 343L does not appear as a co-requisite in the catalog entry; as a 0-credit lab, BIOL 343L does not appear in the catalog. But when registering for BIOL 343, students must also register for a section of BIOL 343L.

Cross-listing, if any: NA

Is this course repeatable? □ yes  □ no  If yes, how many total credit hours may the student earn? ____

F. NEW COURSE INFORMATION. If you are deactivating a course, leave this blank. Otherwise, please fill out all fields. For changed courses, use boldface for the information that is changing.

Department: Biology  
School: SSM  
Subject Acronym: BIOL  
Course Number: 343

Credit hours: ___ lecture ___ lab ___ seminar ___ independent study
Contact hours: ___ lecture ___ lab ___ seminar ___ independent study

Course title: Animal Behavior

Course description (maximum 50 words, exactly as it appears in the catalog):

An introduction to the mechanisms and evolution of behavior in vertebrate and invertebrate animals. Lectures three hours per week.

Restrictions (pre-requisites, co-requisites, majors only, etc.):
Prerequisites: BIOL 111/111L, BIOL 112/112L, BIOL 211/211D, and BIOL 305.

Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor.
Note: When registering for BIOL 343, students will no longer be required to register for a section of BIOL 343L.

If this is a newly-created course, is it intended to be the equivalent of an existing course? □ yes  □ no
If so, which course? __________________________

If equivalent, will the newly-created course replace the existing course? □ yes  □ no
Note: If yes, you must deactivate that course by submitting an additional Course Form.

Cross-listing, if any (submit approval from relevant department): ___ NA _____________
Note: Cross-listed courses are equivalent.

Is this course repeatable? □ yes x no If yes, how many total credit hours may the student earn? ___

Is there an activity, lab, or other fee associated with this course? □ yes x no What is the fee? $_____
Note: The Senate cannot approve new fees; Business Affairs will submit any such request to the Board of Trustees. The course can still be created, but the fee will not be attached until the Board has approved it.

G. COSTS. List all of the new costs or cost savings (including new faculty/staff requests, library, equipment, etc.) associated with your request.

No costs are expected.

H. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the course?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

How does this course align with the student learning outcomes articulated for the major, program, or general education? What program-level outcome or outcomes does it support? Is the content or skill introduced, reinforced, or demonstrated in this course?

I. PROGRAM CHANGES. Will this course be added to the existing degree requirements or list of approved electives of a major, minor, or concentration? □ yes x no

This form was last updated on 12/13/13 and replaces all others.
If yes, please attach a Change Minor and/or Change Major/Program Form as appropriate.

J. CHECKLIST.

☑️ I have completed all relevant parts of the form.

☑️ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☐ (For new courses only) I have attached a syllabus.

☑️ (For courses used in any way by other departments, including cross-listing) I have attached an acknowledgement from the relevant department.

☐ (For courses intended to fulfill a Gen Ed requirement) I have submitted the proposal to the Gen Ed committee.

☑️ I have submitted one Signature Form that lists all of the different forms I am submitting.
B. Change BIOL 343L

FACULTY CURRICULUM COMMITTEE
COURSE FORM

Instructions:

- Please fill out one of these forms for each course you are adding, changing, deactivating, or reactivating.
- Fill out the parts of the form specified in part B. **You must do this before your request can move forward!**
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, start by checking the instructions on the website. Please feel free to contact the committee chairs with any remaining questions you might have.

A. CONTACT/COURSE INFORMATION.

Name: Melissa Hughes    Phone: 953-6557    Email: hughesm@cofc.edu

Department or Program: BiOL    School: SSM

Subject Acronym and Course Number: BIOL 343L (Animal Behavior Lab)

Catalog Year in which changes will take effect: FALL __2015___

B. TYPE OF REQUEST. Please check all that apply, then fill out the specified parts of the form.

- [ ] Add a New Course (complete parts C, D, F, G, H, I, J)
- [x] Change Part of an Existing Course (complete parts C, D, E, F, G, I, J)
  - [ ] Course Number (you must submit a course deactivation request for the old course number)
  - [ ] Course Name
  - [ ] Course Description
  - [x] Credit/Contact Hours
  - [x] Restrictions (prerequisites, co-requisites, junior/senior standing, etc.)
  - [ ] Deactivate an Existing Course (complete parts C, D, E, G, I, J)
  - [ ] Reactivate a Previously-Deactivated Course (complete parts C, D, E, G, I, J)

C. RATIONALE AND EXPLANATION. Please describe your request and explain why you are making it.

Currently, this course is a 0-credit lab course, which must be taken concurrently with BIOL 343 (Animal Behavior).

The proposed changes are as follows: change BIOL 343L to a 1-credit course that can be taken concurrently with BIOL 343, or in subsequent semesters (a separate request will be submitted to change BIOL 343 to a 3-credit class with no lab requirement). In other words, the currently required lab section will be changed to an optional lab section, with the lecture component (BIOL 343) as a pre- or co-requisite.

Rationale: The first rationale for this change is simply to make BIOL 343 available to more students: lab sections have necessarily limited enrollment; however, demand for the lecture portion of the course is high and students without priority registration typically cannot access the course until their senior year. Second, the subject matter of BIOL 343 - the function, evolution and underlying mechanisms of behavior - integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing a broader basis for students seeking more specialized coursework in any one of these areas. Separating the lecture and lab components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them. Finally, having a cohort of students in BIOL 343L who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

This form was last updated on 12/13/13 and replaces all others.
D. IMPACT ON EXISTING PROGRAMS AND COURSES. Please briefly describe the impact of your request on your own programs and courses as well other programs and courses. If another program requires the course, you must submit their written acknowledgement with this proposal. Also, the affected program must describe any change in the number of credit hours they require. Include a list of similar courses in other departments and explain any overlap.

BIOL 343L is currently not listed in the catalog, but is a 0-credit lab section that is part of BIOL 343; 0-credit lab sections do not have catalog listings, but do have their own CRNs and students register for them separately. Thus BIOL 343L falls into a bit of a grey zone: although it lacks a catalog listing, clearly the course “exists”, so after some discussion with the Registrar’s Office (appended to the end of this form), we decided that a “change of course” approach (rather than proposing BIOL 343L as a new course) seemed most appropriate.

Because BIOL 343L is not currently listed in the catalog, however, its change of status to a 1-credit course with a catalog listing requires adding it to the list of electives for Biology majors. Currently, BIOL 343 (including BIOL 343L) is listed as an elective in all Biology majors (BS Biology, BA Biology, BS Marine Biology, BS Biology with Teaching Option, BS Biology with concentration in Molecular Biology). For all except BS Biology with Teaching Option (discussed below), BIOL 343 applies both an elective credit hour at 300 or above requirement, and a 300 or above lab requirement in these majors. With the proposed change, BIOL 343 will continue to apply to the elective credit hour requirement, and BIOL 343L will apply to both the credit hour and lab requirement (“Change of Program” forms to add BIOL 343L to the list of electives for these majors are included here). For a student who takes BIOL 343L, there will be no change from the current situation (4 credit hours of elective (1 credit from BIOL 343L and 3 credits from BIOL 343 as a pre- or co-requisite) and 1 lab).

For BS Biology with Teaching Option, BIOL 343 is currently listed as an organismal elective (elective class focusing on biology at the level of the organism); students are required to take at least one organismal elective, but there is no specific requirement for credit hours or labs for this category of elective. Thus BIOL 343 will continue to be listed as an elective in this program; no changes to this program are proposed at this time.

BIOL 343 is also an elective in the Neuroscience Minor, and the Physics Computational Neuroscience program. Removing the lab requirement from BIOL 343 is likely to increase access to this course for students in these programs, as they do not have specific Biology lab elective requirements. Letters are included here from the directors of both programs acknowledging the proposed change.

Finally, BIOL 343 is in the process of being added to the list of electives for the Women’s and Gender Studies program (it has been approved for the program but has not yet been added to the catalog). As above, removing the lab requirement is likely to increase access to this course for students in WGS, and a letter from the director is included here as well.
E. EXISTING COURSE INFORMATION. If you are proposing a new course, just leave this blank. Otherwise, please fill out all fields.

Department: Biology School: SSM Subject Acronym: BIOL Course Number: 343L

Credit hours: ___ lecture _0_ lab ___ seminar ___ independent study
Contact hours: ___ lecture _3_ lab ___ seminar ___ independent study

Course title: NA (0-credit labs are not listed in the catalog)

Course description (maximum 50 words, exactly as it appears in the catalog):

NA (see above; description for BIOL 343 includes the lab component: “An introduction to the mechanisms and evolution of behavior in vertebrate and invertebrate animals. Lectures 3 hours per week; laboratory 3 hours per week.”)

Restrictions (pre-requisites, co-requisites, majors only, etc.):
See above; same as for BIOL 343:
Prerequisites: BIOL 111/111L, BIOL 112/112L, BIOL 211/211D, and BIOL 305.
Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor.

Cross-listing, if any: NA

Is this course repeatable? ☐ yes ☒ no If yes, how many total credit hours may the student earn? ____

F. NEW COURSE INFORMATION. If you are deactivating a course, leave this blank. Otherwise, please fill out all fields. For changed courses, use boldface for the information that is changing.

Department: Biology School: SSM Subject Acronym: BIOL Course Number: 343

Credit hours: ___ lecture _1_ lab ___ seminar ___ independent study
Contact hours: ___ lecture _8_ lab ___ seminar ___ independent study

Course title: Animal Behavior Lab

Course description (maximum 50 words, exactly as it appears in the catalog):

An introduction to field and laboratory analyses of behavior in vertebrate and invertebrate animals. Laboratory three hours per week.

Restrictions (pre-requisites, co-requisites, majors only, etc.):

Prerequisites: BIOL 111/111L, BIOL 112/112L, BIOL 211/211D, and BIOL 305.

Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor; BIOL 343 or permission of instructor.

If this is a newly-created course, is it intended to be the equivalent of an existing course? ☐ yes ☐ no
If so, which course? _____________

If equivalent, will the newly-created course replace the existing course? ☐ yes ☐ no

Note: If yes, you must deactivate that course by submitting an additional Course Form.

This form was last updated on 12/13/13 and replaces all others.
Cross-listing, if any (submit approval from relevant department): ___NA__________
Note: Cross-listed courses are equivalent.

Is this course repeatable? ☐ yes ☒ no If yes, how many total credit hours may the student earn? _____

Is there an activity, lab, or other fee associated with this course? ☒ yes ☐ no What is the fee? $____ new fee; BIOL 343L already exists and is subject to SSM lab fees.
Note: The Senate cannot approve new fees; Business Affairs will submit any such request to the Board of Trustees. The course can still be created, but the fee will not be attached until the Board has approved it.

G. COSTS. List all of the new costs or cost savings (including new faculty/staff requests, library, equipment, etc.) associated with your request.

No new costs are expected.

H. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the course?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
</tbody>
</table>

1. 

2. 

3. 

4. 

How does this course align with the student learning outcomes articulated for the major, program, or general education? What program-level outcome or outcomes does it support? Is the content or skill introduced, reinforced, or demonstrated in this course?

I. PROGRAM CHANGES. Will this course be added to the existing degree requirements or list of approved electives of a major, minor, or concentration? ☒ yes ☐ no

If yes, please attach a Change Minor and/or Change Major/Program Form as appropriate.
J. CHECKLIST.

☒ I have completed all relevant parts of the form.

☒ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☐ (For new courses only) I have attached a syllabus.

☒ (For courses used in any way by other departments, including cross-listing) I have attached an acknowledgement from the relevant department.

☐ (For courses intended to fulfill a Gen Ed requirement) I have submitted the proposal to the Gen Ed committee.

☒ I have submitted one Signature Form that lists all of the different forms I am submitting.
FACULTY CURRICULUM COMMITTEE
CHANGE/DELETE PROGRAM FORM

Instructions:

• Please fill out all of the portions of the form that are specified in section B. You must do this before your request can move forward!
• Remember that your changes will not be implemented until the next catalog year at the earliest.
• If you have questions, please start by checking the detailed instructions on the website.
• Please feel free to contact the committee chair with any remaining questions you might have.

A. CONTACT INFORMATION.

Name: Melissa Hughes  Phone: 953-6557  Email: hughesm@cofc.edu
School: SSM  Department or Program: Biology
Name and Acronym of Major: Biology Major Teaching Option

B. CATEGORY OF REVIEW. Please check all that apply, then fill out the specified parts of the form.

☐ Change Request (fill out all sections)
  ☑ Add an existing course to requirements or electives
  ☐ Add a new course to requirements or electives (attach completed course form for each)
  ☐ Delete courses from requirements or electives
  ☐ Add or modify concentration*
  ☐ Add or modify cognate*
  *Note: Only concentrations and cognates requiring 18 or more credit hours will be tracked in Banner and Degree Works and noted on the transcript.

☐ Terminate Program (fill out E, G, H, and I)
  ☐ Terminate degree
  ☐ Terminate major
  ☐ Terminate concentration
  ☐ Terminate cognate

C. GENERAL INFORMATION

Number of Current Credit Hours (for existing program): _____97+ (61+ Biology)_____
Number of Proposed Credit Hours (for changed program): _____97+ (61+ Biology)_____
Catalog Year in which changes will take effect: FALL __2015____

D. CURRICULUM. Please list every change you are making below AND attach the current Program of Study Worksheet for this major (http://registrar.cofc.edu/program-of-study-resources/program-of-study-worksheets/index.php) with changes marked in RED. Additions should show where the course will be inserted, deletions should be noted by crossing out the course, and moves indicated with arrows. Distinguish between required and elective courses, and note any prerequisites, co-requisites, sequencing, or other restrictions. Provide the catalog description and course list exactly as they should appear in the catalog. For each new course, submit the Curriculum Committee’s Course Form and a sample syllabus.

This form was last updated on 6/6/2013 and replaces all others.
(1) Change to be made: Change organismal requirement from "at least one course" to "at least 4 credit hours"

(2) Change to be made: Change credits for BIOL 343 from 4 to 3 (as it will no longer include a required lab section). Note that no change to co-requisites are necessary; BIOL 343L is currently a 0-credit lab included as part of BIOL 343, so it is not currently listed as a co-requisite for BIOL 343.

(3) Change to be made: Add BIOL 343L
   Required or elective: Elective
   Course title: Animal Behavior Lab
   Restrictions (pre-requisites, co-requisites, majors only, etc.):
   Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor; and BIOL 343 or permission of instructor.
   Catalog description: An introduction to field and laboratory analyses of behavior in vertebrate and invertebrate animals. Laboratory three hours per week.
   Course list: BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

E. RATIONALE AND EXPLANATION. Please provide a narrative addressing the request you are making and why you are making it.

Currently, BIOL 343L is a 0-credit lab section that must be taken concurrently with BIOL 343 (4 credits); BIOL 343 is an elective in this program. The proposed course changes are to "unlink" BIOL 343 and BIOL 343L: change BIOL 343 to 3 credits with no lab requirement; and change BIOL 343L to 1 credit with BIOL 343 as a pre- or co-requisite. These changes will provide greater access to BIOL 343 for students who do not need or want the lab component, and will allow for more advanced experimental work in the lab section.

Currently, students in this program must choose one from a selection of 'organismal' courses (biology courses in which the focus is on the level of the organism), including BIOL 343/343L. All of these courses include a lab section, and thus are 4 credit hours, but the requirement is stated as 'one course'. To maintain the status quo within this program, the requirement will be changed to "4 credit hours", and the Animal Behavior option will be stated as BIOL 343 (3) and BIOL 343L (1).

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the major or program?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. At the end of the foundation sequence (BIOL 111, BIOL 112, BIOL 211), students demonstrate improvement in their understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by improved performance on the Biology Major Field Test (MFT) over the incoming first year class performance.</td>
</tr>
<tr>
<td>2. At the end of the program (BS, BA, BS Marine), students demonstrate maintained understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by steady performance overall on the Biology MFT compared to performance at the end of the foundation sequence.</td>
</tr>
</tbody>
</table>

This form was last updated on 6/6/2013 and replaces all others. Page 2 of 4
3. At the end of the program (BS, BA, BS Marine), students demonstrate improvement from the foundation sequence.

Success is demonstrated by improved group performance for some of the Assessment Indicators on the Biology MFT compared to the end of the foundation sequence.

4. At the end of the program (BS, BA, BS Marine), students demonstrate the ability to understand standard scientific communication and to communicate their own work clearly and effectively using a variety of methods.

Success is demonstrated by acceptable oral and written reports evaluated by common departmental rubrics.

Additional Outcomes or Comments:

The subject matter of BIOL 343 - the function, evolution and underlying mechanisms of behavior - integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing a broader basis for students seeking more specialized coursework in any one of these areas. Separating the lecture (BIOL 343) and lab (BIOL 343L) components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them.

BIOL 343L focuses on the application of the scientific method to the study of animal behavior - in particular, hypothesis generation and experimental design. Having a cohort of students in BIOL 343L who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

G. IMPACT ON EXISTING PROGRAMS AND COURSES. Please describe the impact of this request on other programs and courses. If you are deleting a program, please describe the effect on all programs that will be impacted; if you are adding or changing a program, please explain any overlap with existing programs at the College.

The proposed changes are expected to increase opportunities for students to take BIOL 343, as it will no longer require the lab section. This increase in access to the course includes not only students in Biology majors and programs, but also those in the Neuroscience Minor and Women’s and Gender Studies programs.

H. COSTS ASSOCIATED WITH THE REQUESTED ACTION. List all of the new costs or cost savings (including new faculty/staff requests, library, or equipment) associated with your request.

None expected. BIOL 343L already exists and is typically taught twice / year; no increase in the number of sections offered is expected.

I. CHECKLIST

☒ I have completed all relevant parts of the form.

☒ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☒ I have attached a Course Form for each newly-created or modified course.

☒ (For proposals that affect other departments in any way) I have attached an acknowledgement from the relevant department.

This form was last updated on 6/6/2013 and replaces all others.
☑ I have provided the complete curriculum for the program, concentration, emphasis, etc., including the description and course list, exactly as it should appear in the catalog.

☑ I have submitted one Signature Form that lists all of the different forms I am submitting.
C. Add BIOL 343L to Biology BS

FACULTY CURRICULUM COMMITTEE
CHANGE/DELETE PROGRAM FORM

Instructions:
- Please fill out all of the portions of the form that are specified in section B. You must do this before your request can move forward!
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, please start by checking the detailed instructions on the website.
- Please feel free to contact the committee chair with any remaining questions you might have.

A. CONTACT INFORMATION.

Name: Melissa Hughes Phone: 953-6557 Email: hughesm@cofc.edu

School: SSM Department or Program: Biology

Name and Acronym of Major: Biology BS

B. CATEGORY OF REVIEW. Please check all that apply, then fill out the specified parts of the form.

- [x] Change Request (fill out all sections)
  - [x] Add an existing course to requirements or electives
  - [ ] Add a new course to requirements or electives (attach completed course form for each)
  - [ ] Delete courses from requirements or electives
  - [ ] Add or modify concentration*
  - [ ] Add or modify cognate*

*Note: Only concentrations and cognates requiring 18 or more credit hours will be tracked in Banner and Degree Works and noted on the transcript.

- [ ] Terminate Program (fill out E, G, H, and I)
  - [ ] Terminate degree
  - [ ] Terminate major
  - [ ] Terminate concentration
  - [ ] Terminate cognate

C. GENERAL INFORMATION

Number of Current Credit Hours (for existing program): _____65+_____
Number of Proposed Credit Hours (for changed program): _____65+_____
Catalog Year in which changes will take effect: FALL ___2015____

D. CURRICULUM. Please list every change you are making below AND attach the current Program of Study Worksheet for this major (http://registrar.cofc.edu/program-of-study-resources/program-of-study-worksheets/index.php) with changes marked in RED. Additions should show where the course will be inserted, deletions should be noted by crossing out the course, and moves indicated with arrows. Distinguish between required and elective courses, and note any prerequisites, co-requisites, sequencing, or other restrictions. Provide the catalog description and course list exactly as they should appear in the catalog. For each new course, submit the Curriculum Committee’s Course Form and a sample syllabus.

This form was last updated on 6/6/2013 and replaces all others.
(1) **Change to be made:** Add BIOL 343L
   
   **Required or electives:** Elective
   
   **Course title:** Animal Behavior Lab
   
   **Restrictions (pre-requisites, co-requisites, majors only, etc.):**
   
   **Co-requisite or prerequisite:** MATH 250 or equivalent course in statistics or permission of instructor; and BIOL 343 or permission of instructor.
   
   **Catalog description:** An introduction to field and laboratory analyses of behavior in vertebrate and invertebrate animals. Laboratory three hours per week.
   
   **Course list:** BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

(2) **Change to be made:** change credits for BIOL 343 from 4 to 3 (as it will no longer include a required lab section). Note that no change to co-requisites are necessary; BIOL 343L is currently a 0-credit lab included as part of BIOL 343, so it is not currently listed as a co-requisite for BIOL 343.

**E. RATIONALE AND EXPLANATION.** Please provide a narrative addressing the request you are making and why you are making it.

Currently, BIOL 343L is a 0-credit lab section that must be taken concurrently with BIOL 343 (4 credits); BIOL 343 is an elective in this program. The proposed course changes are to “unlink” BIOL 343 and BIOL 343L: change BIOL 343 to 3 credits with no lab requirement; and change BIOL 343L to 1 credit with BIOL 343 as a pre- or co-requisite. These changes will provide greater access to BIOL 343 for students who do not need or want the lab component, and will allow for more advanced experimental work in the lab section.

The proposed change to the program is to add BIOL 343L to the list of electives. This changes effectively preserves the status quo: students taking BIOL 343 and BIOL 343L currently receive 4 elective credits in this program.

**F. STUDENT LEARNING OUTCOMES AND ASSESSMENT.**

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the major or program?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. At the end of the foundation sequence (BIOL 111, BIOL 112, BIOL 211), students demonstrate improvement in their understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by improved performance on the Biology Major Field Test (MFT) over the incoming first year class performance.</td>
</tr>
<tr>
<td>2. At the end of the program (BS, BA, BS Marine), students demonstrate maintained understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by steady performance overall on the Biology MFT compared to performance at the end of the foundation sequence.</td>
</tr>
<tr>
<td>3. At the end of the program (BS, BA, BS Marine), students demonstrate improvement from the foundation sequence.</td>
<td>Success is demonstrated by improved group performance for some of the Assessment Indicators on the Biology MFT compared to the end of the foundation sequence.</td>
</tr>
</tbody>
</table>

This form was last updated on 6/6/2013 and replaces all others.
4. At the end of the program (BS, BA, BS Marine), students demonstrate the ability to understand standard scientific communication and to communicate their own work clearly and effectively using a variety of methods. Success is demonstrated by acceptable oral and written reports evaluated by common departmental rubrics.

Additional Outcomes or Comments:

The subject matter of BIOL 343 - the function, evolution and underlying mechanisms of behavior - integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing a broader basis for students seeking more specialized coursework in any one of these areas. Separating the lecture (BIOL 343) and lab (BIOL 343L) components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them.

BIOL 343L focuses on the application of the scientific method to the study of animal behavior - in particular, hypothesis generation and experimental design. Having a cohort of students in BIOL 343L who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

G. IMPACT ON EXISTING PROGRAMS AND COURSES. Please describe the impact of this request on other programs and courses. If you are deleting a program, please describe the effect on all programs that will be impacted; if you are adding or changing a program, please explain any overlap with existing programs at the College.

The proposed changes are expected to increase opportunities for students to take BIOL 343, as it will no longer require the lab section. This increase in access to the course includes not only students in Biology majors and programs, but also those in the Neuroscience Minor and Women’s and Gender Studies programs.

H. COSTS ASSOCIATED WITH THE REQUESTED ACTION. List all of the new costs or cost savings (including new faculty/staff requests, library, or equipment) associated with your request.

None expected. BIOL 343L already exists and is typically taught twice / year; no increase in the number of sections offered is expected.

I. CHECKLIST

☒ I have completed all relevant parts of the form.

☒ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☒ I have attached a Course Form for each newly-created or modified course.

☒ (For proposals that affect other departments in any way) I have attached an acknowledgement from the relevant department.

☒ I have provided the complete curriculum for the program, concentration, emphasis, etc., including the description and course list, exactly as it should appear in the catalog.

☒ I have submitted one Signature Form that lists all of the different forms I am submitting.
D. Add BIOL 343L to Biology BA

FACULTY CURRICULUM COMMITTEE
CHANGE/DELETE PROGRAM FORM

Instructions:
- Please fill out all of the portions of the form that are specified in section B. You must do this before your request can move forward!
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, please start by checking the detailed instructions on the website.
- Please feel free to contact the committee chair with any remaining questions you might have.

A. CONTACT INFORMATION.

Name:        Melissa Hughes    Phone:    953-6557    Email:    hughesm@cofc.edu

School:      SSM
Department or Program: Biology

Name and Acronym of Major: Biology BA

B. CATEGORY OF REVIEW. Please check all that apply, then fill out the specified parts of the form.

☐ Change Request (fill out all sections)
   ☑ Add an existing course to requirements or electives
   ☐ Add a new course to requirements or electives (attach completed course form for each)
   ☐ Delete courses from requirements or electives
   ☐ Add or modify concentration*
   ☐ Add or modify cognate*

*Note: Only concentrations and cognates requiring 18 or more credit hours will be tracked in Banner and Degree Works and noted on the transcript.

☐ Terminate Program (fill out E, G, H, and I)
   ☐ Terminate degree
   ☐ Terminate major
   ☐ Terminate concentration
   ☐ Terminate cognate

C. GENERAL INFORMATION

Number of Current Credit Hours (for existing program): ___39+_____
Number of Proposed Credit Hours (for changed program): ___39+_____
Catalog Year in which changes will take effect: FALL __2015____

D. CURRICULUM. Please list every change you are making below AND attach the current Program of Study Worksheet for this major (http://registrar.cofc.edu/program-of-study-resources/program-of-study-worksheets/index.php) with changes marked in RED. Additions should show where the course will be inserted, deletions should be noted by crossing out the course, and moves indicated with arrows. Distinguish between required and elective courses, and note any prerequisites, co-requisites, sequencing, or other restrictions. Provide the catalog description and course list exactly as they should appear in the catalog. For each new course, submit the Curriculum Committee’s Course Form and a sample syllabus.

This form was last updated on 6/6/2013 and replaces all others.  Page 1 of 3
Change to be made: Add BIOL 343L

Required or elective: Elective
Course title: Animal Behavior Lab
Restrictions (pre-requisites, co-requisites, majors only, etc.):
   Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor; and BIOL 343 or permission of instructor.
Catalog description: An introduction to field and laboratory analyses of behavior in vertebrate and invertebrate animals. Laboratory three hours per week.
Course list: BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

Change to be made: change credits for BIOL 343 from 4 to 3 (as it will no longer include a required lab section). Note that no change to co-requisites are necessary; BIOL 343L is currently a 0-credit lab included as part of BIOL 343, so it is not currently listed as a co-requisite for BIOL 343.

E. RATIONALE AND EXPLANATION. Please provide a narrative addressing the request you are making and why you are making it.

Currently, BIOL 343L is a 0-credit lab section that must be taken concurrently with BIOL 343 (4 credits); BIOL 343 is an elective in this program. The proposed course changes are to “unlink” BIOL 343 and BIOL 343L: change BIOL 343 to 3 credits with no lab requirement; and change BIOL 343L to 1 credit with BIOL 343 as a pre- or co-requisite. These changes will provide greater access to BIOL 343 for students who do not need or want the lab component, and will allow for more advanced experimental work in the lab section.

The proposed change to the program is to add BIOL 343L to the list of electives. This changes effectively preserves the status quo: students taking BIOL 343 and BIOL 343L currently receive 4 elective credits in this program.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the major or program?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. At the end of the foundation sequence (BIOL 111, BIOL 112, BIOL 211), students demonstrate improvement in their understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by improved performance on the Biology Major Field Test (MFT) over the incoming first year class performance.</td>
</tr>
<tr>
<td>2. At the end of the program (BS, BA, BS Marine), students demonstrate maintained understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by steady performance overall on the Biology MFT compared to performance at the end of the foundation sequence.</td>
</tr>
<tr>
<td>3. At the end of the program (BS, BA, BS Marine), students demonstrate improvement from the foundation sequence.</td>
<td>Success is demonstrated by improved group performance for some of the Assessment Indicators on the Biology MFT compared to the end of the foundation sequence.</td>
</tr>
</tbody>
</table>
4. At the end of the program (BS, BA, BS Marine), students demonstrate the ability to understand standard scientific communication and to communicate their own work clearly and effectively using a variety of methods. Success is demonstrated by acceptable oral and written reports evaluated by common departmental rubrics.

Additional Outcomes or Comments:

The subject matter of BIOL 343 – the function, evolution and underlying mechanisms of behavior – integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing a broader basis for students seeking more specialized coursework in any one of these areas. Separating the lecture (BIOL 343) and lab (BIOL 343L) components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them.

BIOL 343L focuses on the application of the scientific method to the study of animal behavior – in particular, hypothesis generation and experimental design. Having a cohort of students in BIOL 343L who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

G. IMPACT ON EXISTING PROGRAMS AND COURSES. Please describe the impact of this request on other programs and courses. If you are deleting a program, please describe the effect on all programs that will be impacted; if you are adding or changing a program, please explain any overlap with existing programs at the College.

The proposed changes are expected to increase opportunities for students to take BIOL 343, as it will no longer require the lab section. This increase in access to the course includes not only students in Biology majors and programs, but also those in the Neuroscience Minor and Women’s and Gender Studies programs.

H. COSTS ASSOCIATED WITH THE REQUESTED ACTION. List all of the new costs or cost savings (including new faculty/staff requests, library, or equipment) associated with your request.

None expected. BIOL 343L already exists and is typically taught twice / year; no increase in the number of sections offered is expected.

I. CHECKLIST

☑ I have completed all relevant parts of the form.

☑ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☑ I have attached a Course Form for each newly-created or modified course.

☑ (For proposals that affect other departments in any way) I have attached an acknowledgement from the relevant department.

☑ I have provided the complete curriculum for the program, concentration, emphasis, etc., including the description and course list, exactly as it should appear in the catalog.

☑ I have submitted one Signature Form that lists all of the different forms I am submitting.

This form was last updated on 6/6/2013 and replaces all others.
Biology (B.A.) Major Requirements

Degree: Bachelor of Arts
Credit Hours: 39+

*PR* indicates a pre-requisite. *CO* indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses

**BIOL 111**  Introduction to Cell and Molecular Biology (3) PR: None; CO: BIOL 111L

**BIOL 111L**  Introduction to Cell and Molecular Biology Lab (1) CO: BIOL 111

**OR**

**HONS 151**  Honors Biology I (3) PR: None; CO: HONS 151L

**HONS 151L**  Honors Biology I Lab (1) CO: HONS 151

**BIOL 112**  Evolution, Form, and Function of Organisms (3) PR: BIOL 111 and 111L; CO: BIOL 112L

**BIOL 112L**  Evolution, Form, and Function of Organisms Lab (1) CO: BIOL 112

**OR**

**HONS 152**  Honors Biology II (3) PR: HONS 151 and 151L; CO: HONS 152L

**HONS 152L**  Honors Biology II Lab (1) CO: HONS 152

**BIOL 211**  Biodiversity, Ecology, and Conservation Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D

**BIOL 211D**  Biodiversity, Ecology, and Conservation Biology Discussion (0) CO: BIOL 211

**BIOL 305**  Genetics (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D and MATH 250 or instructor permission

Complete 13 credit hours of BIOL courses from the following, including 9 credit hours at the 300-level or above; three courses must be taken with labs; two of the courses with labs must be at the 300-level or above. Labs may carry separate credit or be part of a 4 credit course. (Independent study, tutorial, Bachelor’s Essay, or BIOL 450 and 451 with labs do not fulfill the lab requirement).

**BIOL 201**  Human Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L

**BIOL 202**  Human Anatomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L

**BIOL 204**  Man and the Environment (3) PR: None

**BIOL 209**  Marine Biology (4) PR: None

**BIOL 250**  Special Topics in Biology (1-4) PR: One year of biology or instructor permission

**BIOL 300**  Botany (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 301**  Plant Taxonomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 302**  Plant Anatomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 303**  Phycology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 304**  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 305L**  Genetics Lab (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250

**BIOL 310**  General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

**BIOL 312**  Molecular Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250

**BIOL 312L**  Molecular Biology Laboratory (1) PR or CO: BIOL 312 and MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.
BIOL 313  Cell Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 313L  Cell Biology Laboratory (1) PR or CO: BIOL 313 and MATH 250

BIOL 314  Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

BIOL 320  Histology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 321  General and Comparative Physiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or instructor permission

BIOL 322  Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 323  Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 332  Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 333  Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 334  Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 335  Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 336  Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 337  Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 338  Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 339  Dinosaur Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 340  Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 341  General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 342  Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250; one year of college-level Math and one year of college-level Chemistry

BIOL 343  Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 350  Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 351  Principles of Neurobiology (3) PR: PSYC 103 and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or PSYC 214; PR or CO: MATH 250

BIOL 352  Neurobiology and Behavior (3) PR: BIOL 351 or PSYC 351 or PSYC 214; PR or CO: MATH 250

BIOL 353  Hormones and Behavior (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 354  Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 221 and PSYC 220 or PSYC 250; and instructor permission

BIOL 357  Oceanographic Research (4) PR: BIOL 342 and instructor permission; PR or CO: MATH 250

BIOL 360  Introduction to Biometry (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 396  Biophysical Modeling of Excitable Cells (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and PHYS 111 and 111L and PHYS 112 and 112L or HONS 158 and 158L or BIOL 211 and 211D and BIOL 305 and PHYS 101 and 101L and PHYS 102 and 102L; PR or CO: MATH 250

BIOL 399  Tutorial (1-3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in BIOL; junior standing and tutor and department chair permission; PR or CO: MATH 250

BIOL 406  Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 410</td>
<td>Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 411</td>
<td>Microtechnique and Cytochemistry (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 412</td>
<td>Capstone in Molecular Biology (3) PR: BIOL 111/111L or HONS 151/151L, BIOL 112/112L or HONS 152/152L, BIOL 211/211D, BIOL 305, BIOL 312, MATH 111 PR or CO: CHEM 351, MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.</td>
<td></td>
</tr>
<tr>
<td>BIOL 414</td>
<td>Environmental Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L, and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and BIOL 312 or BIOL 313 or CHEM 351 and MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 420</td>
<td>General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission</td>
<td></td>
</tr>
<tr>
<td>BIOL 421</td>
<td>Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 444</td>
<td>Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 445</td>
<td>Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L, and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 446</td>
<td>Special Topics in Neuroscience (3) PR: Junior or senior standing and instructor permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 447</td>
<td>Seminar in Neuroscience (3) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352; CO: BIOL 448 or PSYC 448; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 448</td>
<td>Bachelor's Essay in Neuroscience (6) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352 and permission of student's major department and the neuroscience program director; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 449</td>
<td>Biology of Coral Reefs (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.000 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 450</td>
<td>Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 451</td>
<td>Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 452</td>
<td>Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.500 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 453</td>
<td>Special Topics (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 455</td>
<td>Seminar in Molecular Biology (2) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305, 312 and 313; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 499</td>
<td>Bachelor's Essay (6) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 3.000 GPA or higher in BIOL; instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 501</td>
<td>Biology of the Crustacea (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 337; 3.000 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 502</td>
<td>Special Topics in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 503</td>
<td>Special Topics in Ecology (3-4) PR: BIOL 111 and 111L or HONS 151 and 151L, and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.000 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250</td>
<td></td>
</tr>
</tbody>
</table>

**Chemistry Requirement**

**CHEM 101** General Chemistry (3) PR: None; CO: CHEM 101L

**CHEM 101L** General Chemistry Lab (1) CO: CHEM 101

**CHEM 102** Organic and Biological Chemistry (3) PR: CHEM 101 and 101L or CHEM 111 and 111L; CO: CHEM 102L
CHEM 102L  Organic and Biological Chemistry Lab (1) CO: CHEM 102

OR

CHEM 111  Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a pre-requisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L

CHEM 111L  Principles of Chemistry Lab (1) CO: CHEM 111

AND

CHEM 112  Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)

CHEM 112L  Principles of Chemistry Lab (1) CO: CHEM 112

Mathematics Requirement

MATH 250  Statistical Methods I (3) PR: Either MATH 111, 120 or instructor permission

Notes:

- **MATH 250** is a prerequisite for all 300-level BIOL courses.
- **CHEM 221** is a recommended course.
- Honors students can take the alternative sequence of HONS 191/HONS 191L, HONS 192/HONS 192L, HONS 293/HONS 293L, and HONS 294/HONS 294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/232L
- Honors students can take the alternative sequence of HONS 157/HONS 157L and HONS 158/HONS 158L in lieu of PHYS 111/111L and PHYS 112/112L.

**Biology (B.S.) Major Requirements**

Degree: Bachelor of Science
Credit Hours: 65+

"PR" indicates a pre-requisite. "CO" indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>PR or CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111</td>
<td>Introduction to Cell and Molecular Biology (3) PR: None; CO: BIOL 111L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 111L</td>
<td>Introduction to Cell and Molecular Biology Lab (1) CO: BIOL 111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HONS 151</td>
<td>Honors Biology I (3) PR: None; CO: HONS 151L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HONS 151L</td>
<td>Honors Biology I Lab (1) CO: HONS 151L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 112</td>
<td>Evolution, Form, and Function of Organisms (3) PR: BIOL 111 and 111L; CO: BIOL 112L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 112L</td>
<td>Evolution, Form, and Function of Organisms Lab (1) CO: BIOL 112L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HONS 152</td>
<td>Honors Biology II (3) PR: HONS 151 and 151L; CO: HONS 152L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HONS 152L</td>
<td>Honors Biology II Lab (1) CO: HONS 152L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 211</td>
<td>Biodiversity, Ecology, and Conservation Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 211D</td>
<td>Biodiversity, Ecology, and Conservation Biology Discussion (0) CO: BIOL 211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Genetics (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D and MATH 250 or instructor permission</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete 19 credit hours of 300-level or above BIOL courses including at least four courses with labs from the BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST. Note: Independent study, tutorial, Bachelor's Essay, or BIOL 450 and 451 with labs do not fulfill the lab requirement.

**BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>PR or CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 300</td>
<td>Botany (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BIOL 301  Plant Taxonomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 302  Plant Anatomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 303  Phycology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 304  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 305L  Genetics Lab (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250

BIOL 310  General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 312  Molecular Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250

BIOL 312L  Molecular Biology Laboratory (1) PR or CO: BIOL 312 and MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

BIOL 313  Cell Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 313L  Cell Biology Laboratory (1) PR or CO: BIOL 313 and MATH 250

BIOL 314  Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

BIOL 320  Histology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 321  General and Comparative Physiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 322  Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 323  Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 332  Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 333  Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 334  Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 335  Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 336  Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 337  Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 338  Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 339  Dinosaur Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 340  Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 341  General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 342  Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: MATH 250

BIOL 343  Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 350  Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250
BIOL 351 Principles of Neurobiology (3) PR: PSYC 103 and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D or PSYC 214; PR or CO: MATH 250

BIOL 352 Neurobiology and Behavior (3) PR: BIOL 351 or PSYC 351 or PSYC 214; PR or CO: MATH 250

BIOL 353 Hormones and Behavior (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 354 Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 211 and PSYC 220 or PSYC 250; and instructor permission

BIOL 357 Oceanographic Research (4) PR: BIOL 342 and instructor permission; PR or CO: MATH 250

BIOL 360 Introduction to Biometry (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 396 Biophysical Modeling of Excitable Cells (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and PHYS 111 and 111L and PHYS 112 and 112 L or HONS 158 and 158L or BIOL 211 and 211D and BIOL 305 and PHYS 101 and 101L and PHYS 102 and 102L; PR or CO: MATH 250

BIOL 399 Tutorial (1-3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; junior standing and tutor and department chair permission; PR or CO: MATH 250

BIOL 406 Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

BIOL 410 Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 411 Microtechnique and Cytochemistry (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 412 Capstone in Molecular Biology (3) PR: BIOL 111/111L or HONS 151/151L or BIOL 112/112L or HONS 152/152L, BIOL 211/211D, BIOL 305, BIOL 312, MATH 111 PR or CO: CHEM 351, MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

BIOL 414 Environmental Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and BIOL 312 or BIOL 313 or CHEM 351 and MATH 250

BIOL 420 General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

BIOL 421 Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

BIOL 444 Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 445 Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

BIOL 446 Special Topics in Neuroscience (3) PR: Junior or senior standing and instructor permission; PR or CO: MATH 250

BIOL 447 Seminar in Neuroscience (3) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352; CO: BIOL 448 or PSYC 448; PR or CO: MATH 250

BIOL 448 Bachelor's Essay in Neuroscience (6) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352 and permission of student's major department and the neuroscience program director; PR or CO: MATH 250

BIOL 449 Biology of Coral Reefs (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 450 Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 451 Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 452 Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.50 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250

BIOL 453 Special Topics (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 455 Seminar in Molecular Biology (2) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305, 312 and 313; PR or CO: MATH 250
BIOL 499  Bachelor's Essay (6) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; instructor and department chair permission; PR or CO: MATH 250

BIOL 501  Biology of the Crustacea (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 337; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 502  Special Topics in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L, and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 503  Special Topics in Ecology (3-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Chemistry Requirement

CHEM 111  Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a pre-requisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L

CHEM 111L  Principles of Chemistry Lab (1) CO: CHEM 111

CHEM 112  Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)

CHEM 112L  Principles of Chemistry Lab (1) CO: CHEM 112

CHEM 231  Organic Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 231L

CHEM 231L  Introduction to Organic Chemistry Laboratory Techniques (1) CO: CHEM 231

CHEM 232  Organic Chemistry (3) PR: CHEM 231 and CHEM 231L; CO: CHEM 232L

CHEM 232L  Organic Synthesis and Analysis (1) CO: CHEM 232

Physics Requirement

PHYS 101  Introductory Physics (3) PR: None; CO: PHYS 101L

PHYS 101L  Introductory Physics Lab (1) CO: PHYS 101

AND

PHYS 102  Introductory Physics (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L

PHYS 102L  Introductory Physics Lab (1) CO: PHYS 102

OR

PHYS 111  General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L

PHYS 111L  General Physics I Lab (1) CO: PHYS 111L or instructor permission

AND

PHYS 112  General Physics II (3) PR: PHYS 111 and 111L or HONS 157 and 157L; PR or CO: MATH 220 or equivalent or instructor permission; CO: PHYS 112L

PHYS 112L  General Physics II Lab (1) CO: PHYS 112 or instructor permission

Mathematics Requirement

MATH 120  Introductory Calculus (4) PR: C- or better in MATH 111 or placement

MATH 250  Statistical Methods I (3) PR: Either MATH 111, 120 or instructor permission

Notes:

• MATH 250 is a prerequisite for all 300-level BIOL courses.

• CHEM 221 is a recommended course.

• Honors students can take the alternative sequence of HONS 191/HONS 191L, HONS 192/HONS 192L, HONS 293/HONS 293L, and HONS 294/HONS 294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/CHEM 232L.

• Honors students can take the alternative sequence of HONS 157/HONS 157L and HONS 158/HONS 158L in lieu of PHYS 111/111L and PHYS 112/112L.
Biology Major with Concentration in Molecular Biology Requirements

Degree: Bachelor of Science
Credit Hours: 72+

"PR" indicates a pre-requisite. "CO" indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>PR:</th>
<th>CO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111</td>
<td>Introduction to Cell and Molecular Biology</td>
<td>None</td>
<td>BIOL 111L</td>
</tr>
<tr>
<td>BIOL 111L</td>
<td>Introduction to Cell and Molecular Biology Lab (1)</td>
<td>CO:</td>
<td>BIOL 111L</td>
</tr>
<tr>
<td>OR</td>
<td>HONS 151</td>
<td>None</td>
<td>HONS 151L</td>
</tr>
<tr>
<td>HONS 151L</td>
<td>Honors Biology I Lab (1)</td>
<td>CO:</td>
<td>HONS 151</td>
</tr>
<tr>
<td>BIOL 112</td>
<td>Evolution, Form, and Function of Organisms</td>
<td>PR: BIOL 111 and 111L; CO: BIOL 112L</td>
<td></td>
</tr>
<tr>
<td>BIOL 112L</td>
<td>Evolution, Form, and Function of Organisms Lab (1)</td>
<td>CO:</td>
<td>BIOL 112L</td>
</tr>
<tr>
<td>OR</td>
<td>HONS 152</td>
<td>PR:</td>
<td>HONS 151 and 151L; CO: HONS 152L</td>
</tr>
<tr>
<td>HONS 152L</td>
<td>Honors Biology II Lab (1)</td>
<td>CO:</td>
<td>HONS 152L</td>
</tr>
<tr>
<td>BIOL 211</td>
<td>Biodiversity, Ecology, and Conservation Biology (4)</td>
<td>PR:</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D</td>
</tr>
<tr>
<td>BIOL 211D</td>
<td>Biodiversity, Ecology, and Conservation Biology Discussion (0)</td>
<td>CO:</td>
<td>BIOL 211</td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Genetics</td>
<td>PR:</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; MATH 250; or instructor permission</td>
</tr>
<tr>
<td>BIOL 305L</td>
<td>Genetics Lab (1)</td>
<td>PR:</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; MATH 250; or instructor permission</td>
</tr>
<tr>
<td>BIOL 312</td>
<td>Molecular Biology</td>
<td>PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 313</td>
<td>Cell Biology</td>
<td>PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L</td>
<td></td>
</tr>
<tr>
<td>BIOL 313L</td>
<td>Cell Biology Laboratory</td>
<td>PR or CO:</td>
<td>BIOL 313 and MATH 250</td>
</tr>
<tr>
<td>BIOL 412</td>
<td>Capstone in Molecular Biology</td>
<td>PR: BIOL 111/111L or HONS 151/151L, BIOL 112/112L or HONS 152/152L, BIOL 211/211D, BIOL 305, BIOL 312, MATH 111; PR or CO: CHEM 351, MATH 250; Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.</td>
<td></td>
</tr>
</tbody>
</table>

Complete 8 credit hours of 300-level or above BIOL courses from the BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST for a total of four courses with labs (independent study, tutorial, Bachelor's Essay, or BIOL 450 and 451 with labs do not fulfill the lab requirement).

**BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>PR:</th>
<th>CO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 300</td>
<td>Botany</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 301</td>
<td>Plant Taxonomy</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 302</td>
<td>Plant Anatomy</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; MATH 250</td>
<td></td>
</tr>
<tr>
<td>BIOL 303</td>
<td>Phycology</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; MATH 250</td>
<td></td>
</tr>
</tbody>
</table>
BIOL 304  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 310  General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 314  Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

BIOL 320  Histology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 321  General and Comparative Physiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or instructor permission

BIOL 322  Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 323  Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 332  Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 333  Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 334  Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 335  Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 336  Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 337  Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 338  Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 339  Dinosaur Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 340  Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 341  General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 342  Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 343  Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 350  Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 351  Principles of Neurobiology (3) PR: PSYC 103 and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and PSYC 14; PR or CO: MATH 250

BIOL 352  Neurobiology and Behavior (3) PR: BIOL 351 or PSYC 351 or PSYC 351; PR or CO: MATH 250

BIOL 353  Hormones and Behavior (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 354  Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 211 and PSYC 220 or PSYC 250; and instructor permission

BIOL 357  Oceanographic Research (4) PR: BIOL 342 and instructor permission; PR or CO: MATH 250

BIOL 360  Introduction to Biometry (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250
BIOL 306 Biophysical Modeling of Excitable Cells (3) PR: BIOL 111 and HONS 151 and 151L and 152L and 152L and PHYS 111 and 111L and 112L and 12L and PHYS 158 and 158L or BIOL 211 and 211D and BIOL 305 and PHYS 101 and 101L and PHYS 102 and 102L; PR or CO: MATH 250

BIOL 399 Tutorial (1-3) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 12L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; junior standing and tutor and department chair permission; PR or CO: MATH 250

BIOL 406 Conservation Biology (3) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L, and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

BIOL 410 Applied and Environmental Microbiology (4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 411 Microtechnique and Cytochemistry (4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 414 Environmental Immunology (3) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and BIOL 312 or BIOL 313 or CHEM 351 and MATH 250

BIOL 420 General and Comparative Endocrinology (4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

BIOL 421 Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

BIOL 444 Plant Ecology (4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 445 Systematic Biology (3) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

BIOL 446 Special Topics in Neuroscience (3) PR: Junior or senior standing and instructor permission; PR or CO: MATH 250

BIOL 447 Seminar in Neuroscience (3) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352; BIOL 348 or PSYC 448; PR or CO: MATH 250

BIOL 448 Bachelor's Essay in Neuroscience (6) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352 and permission of student's major department and the neuroscience program director; PR or CO: MATH 250

BIOL 449 Biology of Coral Reefs (3) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 450 Problems in Biology (1-4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 451 Problems in Marine Biology (1-4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 452 Seminar (1) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.50 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250

BIOL 453 Special Topics (1-4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 499 Bachelor's Essay (6) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; instructor and department chair permission; PR or CO: MATH 250

BIOL 501 Biology of the Crustacea (4) PR: BIOL 111 and HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 337; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250
BIOL 502  Special Topics in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 503  Special Topics in Ecology (3-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Chemistry Requirement

CHEM 111  Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a pre-requisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L

CHEM 111L  Principles of Chemistry Lab (1) CO: CHEM 111

CHEM 112  Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)

CHEM 112L  Principles of Chemistry Lab (1) CO: CHEM 112

CHEM 231  Organic Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 231L

CHEM 231L  Introduction to Organic Chemistry Laboratory Techniques (1) CO: CHEM 231

CHEM 232  Organic Chemistry (3) PR: CHEM 231 and CHEM 231L; CO: CHEM 232L

CHEM 232L  Organic Synthesis and Analysis (1) CO: CHEM 232

CHEM 351  Biochemistry (3) PR: CHEM 232, CHEM 232L

CHEM 352  Biochemistry II (3) PR: CHEM 351

CHEM 354L  Biochemistry II Laboratory (1) PR: CHEM 351

Physics Requirement

PHYS 101  Introductory Physics (3) PR: None; CO: PHYS 101L

PHYS 101L  Introductory Physics Lab (1) CO: PHYS 101

AND

PHYS 102  Introductory Physics (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L

PHYS 102L  Introductory Physics Lab (1) CO: PHYS 102

OR

PHYS 111  General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L

PHYS 111L  General Physics I Lab (1) CO: PHYS 111L or instructor permission

AND

PHYS 112  General Physics II (3) PR: PHYS 111 and 111L or HONS 157 and 157L; PR or CO: MATH 220 or equivalent or instructor permission; CO: PHYS 112L

PHYS 112L  General Physics II Lab (1) CO: PHYS 112 or instructor permission

Mathematics Requirement

MATH 120  Introductory Calculus (4) PR: C- or better in MATH 111 or placement

MATH 250  Statistical Methods I (3) PR: Either MATH 111, 120 or instructor permission

Notes:

• MATH 250 is a prerequisite for all 300-level BIOL courses.

• CHEM 221 is a recommended course.

• Honors students can take the alternative sequence of HONS 191/HONS 191L, HONS 192/HONS 192L, HONS 293/HONS 293L, and HONS 294/HONS 294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/CHEM 232L

• Honors students can take the alternative sequence of HONS 157/HONS 157L and HONS 158/HONS 158L in lieu of PHYS 111/111L and PHYS 112/112L
# Biology Major Teaching Option Requirements

Degree: Bachelor of Science  
Credit Hours: 61+ (does not include Secondary Education Cognate Major Requirements)

Students interested in teacher certification in biology must complete the following courses and the secondary education cognate major requirements. See the School of Education, Health and Human Performance section of this catalog for a listing of the required secondary education cognate major courses. Students should apply for acceptance to this program no later than the second semester of their sophomore year. Requirements for this include admission to and successful completion of the approved teacher education program. Students must successfully complete all requirements for certification in secondary education.

**Notes:** When declaring teacher certification in biology through the Program of Study Management System (POSM), students must first select "Declare or Add a Major" and then "Secondary Education Cognate" from the major list. Once this selection is made, a second menu box will appear with a list of the associated majors. Select the biology major and follow the on-screen instructions.  
"PR" indicates a pre-requisite. "CO" indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult [http://registrar.cofc.edu/general-edu](http://registrar.cofc.edu/general-edu) for more information.

**Required Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111</td>
<td>Introduction to Cell and Molecular Biology</td>
<td>(3)</td>
<td>PR: None; CO: BIOL 111L</td>
</tr>
<tr>
<td>BIOL 111L</td>
<td>Introduction to Cell and Molecular Biology Lab 1</td>
<td>(1)</td>
<td>CO: BIOL 111</td>
</tr>
<tr>
<td>OR</td>
<td>HONS 151</td>
<td>(3)</td>
<td>PR: None; CO: HONS 151L</td>
</tr>
<tr>
<td>HONS 151L</td>
<td>Honors Biology I Lab 1</td>
<td>(1)</td>
<td>CO: HONS 151</td>
</tr>
<tr>
<td>BIOL 112</td>
<td>Evolution, Form, and Function of Organisms</td>
<td>(3)</td>
<td>PR: BIOL 111 and 111L; CO: BIOL 112L</td>
</tr>
<tr>
<td>BIOL 112L</td>
<td>Evolution, Form, and Function of Organisms Lab 1</td>
<td>(1)</td>
<td>CO: BIOL 112</td>
</tr>
<tr>
<td>OR</td>
<td>HONS 152</td>
<td>(3)</td>
<td>PR: HONS 151 and 151L; CO: HONS 152L</td>
</tr>
<tr>
<td>HONS 152L</td>
<td>Honors Biology II Lab 1</td>
<td>(1)</td>
<td>CO: HONS 152</td>
</tr>
<tr>
<td>BIOL 211</td>
<td>Biodiversity, Ecology, and Conservation Biology</td>
<td>(4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D</td>
</tr>
<tr>
<td>BIOL 211D</td>
<td>Biodiversity, Ecology, and Conservation Biology Discussion</td>
<td>(0)</td>
<td>CO: BIOL 211</td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Genetics</td>
<td>(3)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D and MATH 250 or instructor permission</td>
</tr>
</tbody>
</table>

19 additional credit hours in courses at the 300-level or above including:

**Complete one of the following courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 312</td>
<td>Molecular Biology</td>
<td>(3)</td>
<td>PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250</td>
</tr>
<tr>
<td>BIOL 313</td>
<td>Cell Biology</td>
<td>(3)</td>
<td>PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L</td>
</tr>
</tbody>
</table>

**Complete one of the following laboratories:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 305L</td>
<td>Genetics Lab</td>
<td>(1)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250</td>
</tr>
<tr>
<td>BIOL 312L</td>
<td>Molecular Biology Laboratory</td>
<td>(1)</td>
<td>PR or CO: BIOL 312 and MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.</td>
</tr>
<tr>
<td>BIOL 313L</td>
<td>Cell Biology Laboratory</td>
<td>(1)</td>
<td>PR or CO: BIOL 313 and MATH 250</td>
</tr>
</tbody>
</table>

**Complete one of the following courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 304</td>
<td>Plant Physiology</td>
<td>(4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250</td>
</tr>
<tr>
<td>BIOL 321</td>
<td>General and Comparative Physiology</td>
<td>(4)</td>
<td>PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or</td>
</tr>
</tbody>
</table>
instructor permission

Complete at least one course from the following:

**BIOL 300** Botany (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 302** Plant Anatomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 303** Phycology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 304** Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250

*Note:* BIOL 304 may be used to fill the other above requirements.

Complete at least one course from the following:

**BIOL 310** General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

**BIOL 322** Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or BIOL 305; PR or CO: MATH 250

**BIOL 323** Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 332** Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 333** Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 334** Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 335** Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 336** Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

**BIOL 337** Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 338** Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 343** Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

Select 3-7 credit hours of any 300-level course listed above or from the following:

**BIOL 314** Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

**BIOL 340** Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 341** General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

**BIOL 342** Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250; one year of college-level Math and one year of college-level Chemistry

**BIOL 350** Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

**BIOL 354** Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 220 or PSYC 220; and instructor permission

**BIOL 406** Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

**BIOL 410** Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250
BIOL 420  General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

BIOL 421  Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

BIOL 444  Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 445  Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

BIOL 450  Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 451  Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 452  Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.50 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250

BIOL 453  Special Topics (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250

Mathematics Requirement
MATH 120  Introductory Calculus (4) PR: C- or better in MATH 111 or placement
MATH 250  Statistical Methods I (3) PR: Either MATH 111, 120 or instructor permission

Physics Requirement
PHYS 101  Introductory Physics (3) PR: None; CO: PHYS 101L
PHYS 101L  Introductory Physics Lab (1) CO: PHYS 101
AND
PHYS 102  Introductory Physics (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L
PHYS 102L  Introductory Physics Lab (1) CO: PHYS 102
OR

PHYS 111  General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L
PHYS 111L  General Physics I Lab (1) CO: PHYS 111
AND
PHYS 112  General Physics II (3) PR: PHYS 111 and 111L or HONS 157 and 157L; PR or CO: MATH 220 or equivalent or instructor permission; CO: PHYS 112L
PHYS 112L  General Physics II Lab (1) CO: PHYS 112 or instructor permission

Chemistry Requirement
CHEM 111  Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a pre-requisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L
CHEM 111L  Principles of Chemistry Lab (1) CO: CHEM 111
AND
CHEM 112  Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)
CHEM 112L  Principles of Chemistry Lab (1) CO: CHEM 112
AND
CHEM 102  Organic and Biological Chemistry (3) PR: CHEM 101 and 101L or CHEM 111 and 111L; CO: CHEM 102L
CHEM 102L  Organic and Biological Chemistry Lab (1) CO: CHEM 102
OR
CHEM 231 Organic Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 231L
CHEM 231L Introduction to Organic Chemistry Laboratory Techniques (1) CO: CHEM 231

Notes:
- MATH 250 is a prerequisite for all 300-level BIOL courses.
- CHEM 221 is a recommended course.
- Honors students can take the alternative sequence of HONS 191/HONS 191L, HONS 192/HONS 192L, HONS 293/HONS 293L, and HONS 294/HONS 294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/CHEM 232L
- Honors students can take the alternative sequence of HONS 157/HONS 157L and HONS 158/HONS 158L in lieu of PHYS 111/111L and PHYS 112/112L

Business Administration Major Requirements

Degree: Bachelor of Science
Credit Hours: 54+

"PR" indicates a pre-requisite. "CO" indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 203</td>
<td>Financial Accounting (3) PR: Sophomore standing</td>
<td></td>
</tr>
<tr>
<td>ACCT 204</td>
<td>Managerial Accounting (3) PR: Sophomore standing, ACCT 203</td>
<td></td>
</tr>
<tr>
<td>BLAW 205</td>
<td>Legal Environment of Business (3) PR: Sophomore standing</td>
<td></td>
</tr>
<tr>
<td>DSCI 232</td>
<td>Business Statistics (3) PR: MATH 104 or 250</td>
<td></td>
</tr>
<tr>
<td>DSCI 304</td>
<td>Production and Operations Management (3) PR: Junior standing, DSCI 232, MGMT 301, MATH 104 or 250, MATH 105 or 120</td>
<td></td>
</tr>
<tr>
<td>DSCI 320</td>
<td>Management Information Systems (3) PR: Junior standing, ACCT 203, 204, DSCI 232, MATH 104 or 250</td>
<td></td>
</tr>
<tr>
<td>ECON 200</td>
<td>Principles of Microeconomics (3) PR: None</td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Macroeconomics (3) PR: ECON 200</td>
<td></td>
</tr>
<tr>
<td>FINC 303</td>
<td>Business Finance (3) PR: Junior standing, major declaration, ACCT 203, 204, ECON 200, 201, MATH 104 or 250, DSCI 232 suggested</td>
<td></td>
</tr>
<tr>
<td>MATH 104</td>
<td>Elementary Statistics (3) PR: MATH 101 or placement</td>
<td></td>
</tr>
<tr>
<td>OR_</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 250</td>
<td>Statistical Methods I (3) PR: Either MATH 111, MATH 120 or instructor permission</td>
<td></td>
</tr>
<tr>
<td>MATH 105</td>
<td>Calculus for Business and the Social Sciences (3) PR: MATH 101 or placement</td>
<td></td>
</tr>
<tr>
<td>OR_</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 120</td>
<td>Introductory Calculus (4) PR: C- or better in MATH 111 or placement</td>
<td></td>
</tr>
<tr>
<td>MGMT 301</td>
<td>Management and Organizational Behavior (3) PR: Junior Standing, major declaration</td>
<td></td>
</tr>
<tr>
<td>MGMT 408</td>
<td>Business Policy (3) PR: Senior standing, ACCT 203, 204, DSCI 232, 304, ECON 200, 201, FINC 303, MGMT 301, MKTG 302, MATH 104 or 250, MATH 105 or 120</td>
<td></td>
</tr>
<tr>
<td>MKTG 302</td>
<td>Marketing Concepts (3) PR: Junior standing, major declaration, ECON 200, 201</td>
<td></td>
</tr>
</tbody>
</table>

Choose four courses at the 300 or 400-level from the following with a maximum of 6 credit hours of accounting, economics, independent study, special topics, tutorials or travel/study abroad courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 307</td>
<td>Accounting Information Systems (3) PR: Junior standing, ACCT 203</td>
<td></td>
</tr>
<tr>
<td>ACCT 308</td>
<td>Cost Accounting (3) PR: Junior standing, ACCT 203, 204</td>
<td></td>
</tr>
<tr>
<td>ACCT 316</td>
<td>Intermediate Accounting I (3) PR: Junior standing, ACCT 203, 204</td>
<td></td>
</tr>
<tr>
<td>ACCT 317</td>
<td>Intermediate Accounting II (3) PR: Junior standing, ACCT 203, 204, 316</td>
<td></td>
</tr>
<tr>
<td>ACCT 336</td>
<td>Governmental and Not-for-Profit Accounting (3) PR: Junior standing, ACCT 203, 204</td>
<td></td>
</tr>
<tr>
<td>ACCT 341</td>
<td>Federal Taxation I (3) PR: Junior standing, ACCT 203, 204</td>
<td></td>
</tr>
<tr>
<td>ACCT 342</td>
<td>Federal Taxation II (3) PR: Junior standing, ACCT 203, 204, 341</td>
<td></td>
</tr>
<tr>
<td>ACCT 360</td>
<td>Special Topics in Accounting (1-3) PR: Junior standing, and other pre-requisites as required</td>
<td></td>
</tr>
<tr>
<td>ACCT 409</td>
<td>Auditing Theory (3) PR: Senior standing, ACCT 203, 204, 316, 317; CO: ACCT 317 with instructor permission</td>
<td></td>
</tr>
<tr>
<td>ACCT 444</td>
<td>Accounting Internship (1-3) PR: Senior standing as a declared Accounting major in the School of Business</td>
<td></td>
</tr>
</tbody>
</table>
Biology (9-12)
College of Charleston
Teacher Education Program Worksheet

Name: ___________________________  Major Advisor: ___________________________
ID# ___________________________  Education Advisor: ___________________________
Date: ____________________________

In secondary education, you major in your content area. Declare that major first, and then declare a minor in education in the main office of the School of Education as soon as possible. You will be assigned a faculty advisor to work with you in planning your program. You should apply for admission (this is NOT declaring your major) to the Teacher Education Licensure Program the semester you are enrolled in EDFS 201 Introduction to Education. Requirements for admission:

1. Minimum overall GPA of 2.5 and 60 earned semester hours.
2. Passing score on the 3 components of the PRAXIS 1: Pre-Professional Skills Test (Reading, Writing, and Mathematics) as designated by the South Carolina Department of Education.
3. Disposition forms from (a) a general education faculty member, (b) your EDFS 201 professor, and (c) someone who has observed you working with children.
4. A grade of C or better in EDFS 201 Introduction to Education.

ADMISSION IS REQUIRED BEFORE TAKING ANY EDUCATION CLASSES BEYOND EDFS 201.
Anticipated semester of Clinical Practice ________________.

<table>
<thead>
<tr>
<th>Required General Ed. Courses &amp; Hours Completed Freshman &amp; Sophomore Years</th>
<th>HUMANITIES - 12 sem. hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH - 6 sem. hrs.</td>
<td>Four courses following the college's requirements</td>
</tr>
<tr>
<td>ENGL 101 - Comp. &amp; Lit</td>
<td></td>
</tr>
<tr>
<td>ENGL 102 - Comp. &amp; Lit .</td>
<td></td>
</tr>
</tbody>
</table>

| FOREIGN LANGUAGE - 0-12 sem. hrs. | |
| Satisfactory completion of coursework through the intermediate level or demonstrated proficiency at that level. |

| HISTORY - 6 sem. hrs. | |
| HIST 101 - Rise of European Civ. | |
| HIST 102 - Modern Europe or | |
| HIST 103 - World History to 1500 | |
| HIST 104 - World History since 1500 | |

| BIOLOGICAL SCIENCE – 8 sem. hrs. |
| Biology 111 and Lab | |
| Biology 112 and Lab | |

| SOCIAL SCIENCES - 6 sem. hrs. |
| | |

| MATHEMATICS – 6 sem. hrs. |
| 6 sem hours of mathematics to meet minimum degree requirements: |
| Math 120 - Calculus | |
| | |

| Certification Courses – 6 sem. hrs. |
| COMM 104 - Public Speaking | |
| EDFS 201–Intro. to Ed. | |
Biology Major Teaching Option and Secondary Cognate Major Requirements
Catalog Year: 2014-15
Degree: Bachelor of Science
Credit Hours: 97+ (Biology 61+; Secondary Cognate 36)

Teacher Education Track (Grades 9-12)

Students interested in teacher certification in biology must complete the following courses and the secondary education cognate major requirements. See the School of Education, Health and Human Performance section of the undergraduate catalog for a listing of the required secondary education cognate major courses. Students should apply for acceptance to this program no later than the second semester of their sophomore year. Requirements for this program include admission to and successful completion of the approved teacher education program. Students must successfully complete all requirements for certification in secondary education.

Notes: When declaring teacher certification in biology through the Program of Study Management System (POSM), students must first select "Declare or Add a Major" and then "Secondary Education Cognate" from the major list. Once this selection is made, a second menu box will appear with a list of the associated majors. Select the biology major and follow the on-screen instructions.

"PR" indicates a pre-requisite. "CO" indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses:

☐ BIOL 111 Introduction to Cell and Molecular Biology (3) PR: None; CO: BIOL 111L
☐ BIOL 111L Introduction to Cell and Molecular Biology Lab (1) CO: BIOL 111

OR

☐ HONS 151 Honors Biology I (3) PR: None; CO: HONS 151L
☐ HONS 151L Honors Biology I Lab (1) CO: HONS 151

☐ BIOL 112 Evolution, Form, and Function of Organisms (3) PR: BIOL 111 and 111L; CO: BIOL 112L
☐ BIOL 112L Evolution, Form, and Function of Organisms Lab (1) CO: BIOL 112L

OR

☐ HONS 152 Honors Biology II (3) PR: HONS 151 and 151L; CO: HONS 152
☐ HONS 152L Honors Biology II Lab (1) CO: HONS 152

☐ BIOL 211 Biodiversity, Ecology, and Conservation Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D
☐ BIOL 211D Biodiversity, Ecology, and Conservation Biology Discussion (0) CO: BIOL 211

☐ BIOL 305 Genetics (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D and MATH 250 or instructor permission

19 additional credit hours in courses at the 300-level or above including:

Complete one of the following courses:

☐ ______________________

BIOL 312 Molecular Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250

BIOL 313 Cell Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

Complete one of the following laboratories

☐ ______________________
BIOL 305L  Genetics Lab (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250

BIOL 312L  Molecular Biology Laboratory (1) PR or CO: BIOL 312 and MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

BIOL 313L  Cell Biology Laboratory (1) PR or CO: BIOL 313 and MATH 250

Complete one of the following courses:

-

BIOL 304  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250

 BIOL 321  General and Comparative Physiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or instructor permission

Complete at least one course from the following:

-  

BIOL 300  Botany (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 302  Plant Anatomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 303  Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 304*  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250

Note: * BIOL 304 may be used to fulfill the other above requirements. Change to: Complete at least 4 credit hours from the following:

Complete at least one course from the following:

-  

BIOL 310  General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

 BIOL 322  Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

 BIOL 323  Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 332  Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 333  Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 334  Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

 BIOL 335  Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250
Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

Change to (3)

Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250, AND BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343

☐ Select 3-7 credit hours of any 300-level course listed above or from the following:

Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250; one year of college-level Math and one year of college-level Chemistry

Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 211 and PSYC 220 or PSYC 250; and instructor permission

Comparative Biomechanics (4) PR: BIOL 111/111L or HONS 151/151L and BIOL 112/112L or HONS 152/152L, and BIOL 211; PR or CO: BIOL 305, MATH 250 and PHYS 101/101L or 111/111L; or instructor permission.

Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.50 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250
Mathematics Requirement

☐ MATH 120  Introductory Calculus (4) PR: Placement or C- or better in MATH 111

☐ MATH 250  Statistical Methods I (3) PR: MATH 105 with a C- grade or better or MATH 111 or MATH 120 or permission of instructor

Physics Requirement

☐ PHYS 101  Introductory Physics (3) PR: None; CO or PR: PHYS 101L

☐ PHYS 101L  Introductory Physics Lab (1) CO: PHYS 101

AND

☐ PHYS 102  Introductory Physics II (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L

☐ PHYS 102L  Introductory Physics Lab (1) CO: PHYS 102

OR

☐ PHYS 111  General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L

☐ PHYS 111L  General Physics I Lab (1) CO: PHYS 111

AND

☐ PHYS 112  General Physics II (3) PR: PHYS 111 or HONS 157; CO or PR: MATH 220 or equivalent or instructor permission; CO: PHYS 112L

☐ PHYS 112L  General Physics II Lab (1) CO: PHYS 112

Chemistry Requirement

☐ CHEM 111  Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a pre-requisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L

☐ CHEM 111L  Principles of Chemistry Lab (1) CO: CHEM 111

AND

☐ CHEM 112  Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)

☐ CHEM 112L  Principles of Chemistry Lab (1) CO: CHEM 112

AND

☐ CHEM 102  Organic and Biological Chemistry (3) PR: CHEM 101 and 101L or CHEM 111 and 111L; CO: CHEM 102L

☐ CHEM 102L  Organic and Biological Chemistry Lab (1) CO: CHEM 102

OR

☐ CHEM 231  Organic Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 231L

☐ CHEM 231L  Introduction to Organic Chemistry Laboratory Techniques (1) CO: CHEM 231

Notes:

- MATH 250 is a pre-requisite for all 300-level BIOL courses.

- CHEM 220/220L are recommended courses.

- Honors students can take the alternative sequence of HONS191/HONS191L, HONS 192/HONS192L, HONS293/HONS293L, and HONS294/HONS294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/232L

- Honors students can take the alternative sequence of HONS157/HONS157L and HONS 158/HONS158L in lieu of PHYS 111/111L and PHYS 112/112L

Secondary Cognate Major Requirements

"PR" indicates a pre-requisite. "CO" indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofer.edu/general-edu for more information.
Students interested in teacher certification in secondary education must complete a content major, additional coursework required for certification (if applicable), and the secondary education cognate major requirements. Content majors are available in biology (Bachelor of Science Teaching Option), chemistry (Bachelor of Arts), English (Bachelor of Arts), history (Bachelor of Arts for certification in social studies), mathematics (Bachelor of Science teacher education track), physics (Bachelor of Arts). Students must successfully complete all requirements for certification in secondary education.

### Required Courses

- **COMM 104** Public Speaking (3) *PR: None*
- **EDFS 201** Foundations of Education (3) *PR: Sophomore standing.*

**Note:** *EDFS 201 is prerequisite to all other education courses with a grade of C or better.*

- **EDFS 303** Human Growth and the Educational Process (3) *PR: None*
- **EDFS 326** Integrating Technology Into Teaching (3) *PR: None*
- **EDFS 330** Classroom and Behavior Management (3) *PR: EDFS 201 and class rank of junior or above*
- **EDFS 345** Introduction to the Education of Exceptional Children and Youth (3) *PR: EDFS 303 or equivalent.*
- **EDFS 455** Literacy and Assessment in the Content Areas (3) *PR: None*
- **EDFS 456** Teaching Strategies in the Content Areas (English, Math, Science, Social Studies) (3) *PR: None*

**Note:** *Candidates who have received credit for PSYC 224 (previously listed as PSYC 311) prior to beginning a teacher education program should not take EDFS 303 (credit will not be awarded). Students must enroll in the Secondary sections for each of the courses marked with an asterisk. (See associate department chair to register for courses.) Each course requires a school-based field experience. Students will need a 3-hour block of time per week between the hours of 7 a.m. and 2 p.m. Monday through Friday, to complete each school-based experience.*

### Clinical Practice Internship Requirement

- **EDFS 460** Clinical Practice in the Content Area (12) *PR: Admission to a teacher education program and completion of all education requirements. This course is graded pass/fail. A grade of “P” carries only earned hours. It does not carry quality hours or quality points.*

**Note:** *Students seeking recommendation for South Carolina certification in Secondary Education must complete the program of study above and meet the admission, retention, and exit requirements of the program and the School of Education, Health, and Human Performance. Recommendation to the South Carolina Department of Education for certification in South Carolina is contingent upon successful completion of Clinical Practice, and achievement of passing scores on the necessary Praxis II test(s) for recommendation. Students who do not take Clinical Practice may not earn a degree in Secondary Education and will not be recommended for certification. See your faculty advisor for additional information.*

### Notes:

- You should apply for admission (this is NOT declaring your major) to the Teacher Education Program the semester you are enrolled in EDFS 201 Foundations of Education. Requirements for admission:
  - Minimum overall GPA of 2.60 and 60 earned credit hours.
  - Passing score on the 3 components of the PRAXIS 1: Pre-Professional Skills Test (Reading, Writing, and Mathematics) as designated by the South Carolina Department of Education OR qualifying SAT or ACT scores.
  - Disposition forms from (a) a general education faculty member, (b) your EDFS 201 professor, and (c) someone who has observed you working with children.
  - If a student has transfer credit for a course that is equivalent to EDFS 201, they must meet with the Teacher Education department chair and complete 1 hour of work.
  - A grade of C or better in EDFS 201 Foundations of Education.
• Your admission process must be completed before beginning the professional program.

• You must complete a major in the content area and the cognate major to be forwarded to the State Department of Education for certification.
E. Add BIOL 343L to FACULTY CURRICULUM COMMITTEE
Marine Biology BS CHANGE/DELETE PROGRAM FORM

Instructions:
• Please fill out all of the portions of the form that are specified in section B. You must do this before your request can move forward!
• Remember that your changes will not be implemented until the next catalog year at the earliest.
• If you have questions, please start by checking the detailed instructions on the website.
• Please feel free to contact the committee chair with any remaining questions you might have.

A. CONTACT INFORMATION.
Name: Melissa Hughes Phone: 953-6557 Email: hughesm@cofc.edu
School: SSM Department or Program: Biology
Name and Acronym of Major: Marine Biology BS

B. CATEGORY OF REVIEW. Please check all that apply, then fill out the specified parts of the form.

☐ Change Request (fill out all sections)
  ☑ Add an existing course to requirements or electives
  ☐ Add a new course to requirements or electives (attach completed course form for each)
  ☐ Delete courses from requirements or electives
  ☐ Add or modify concentration*
  ☐ Add or modify cognate*
  *Note: Only concentrations and cognates requiring 18 or more credit hours will be tracked in Banner and Degree Works and noted on the transcript.

☐ Terminate Program (fill out E, G, H, and I)
  ☐ Terminate degree
  ☐ Terminate major
  ☐ Terminate concentration
  ☐ Terminate cognate

C. GENERAL INFORMATION

Number of Current Credit Hours (for existing program): _____64+_____
Number of Proposed Credit Hours (for changed program): _____64+_____
Catalog Year in which changes will take effect: FALL __2015____

D. CURRICULUM. Please list every change you are making below AND attach the current Program of Study Worksheet for this major (http://registrar.cofc.edu/program-of-study-resources/program-of-study-worksheets/index.php) with changes marked in RED. Additions should show where the course will be inserted, deletions should be noted by crossing out the course, and moves indicated with arrows. Distinguish between required and elective courses, and note any prerequisites, co-requisites, sequencing, or other restrictions. Provide the catalog description and course list exactly as they should appear in the catalog. For each new course, submit the Curriculum Committee’s Course Form and a sample syllabus.

This form was last updated on 6/6/2013 and replaces all others. Page 1 of 3
(1) Change to be made: Add BIOL 343L
Required or elective: Elective
Course title: Animal Behavior Lab
Restrictions (pre-requisites, co-requisites, majors only, etc.):  
Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor; and BIOL 343 or permission of instructor.
Catalog description: An introduction to field and laboratory analyses of behavior in vertebrate and invertebrate animals. Laboratory three hours per week.
Course list: BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

(2) Change to be made: change credits for BIOL 343 from 4 to 3 (as it will no longer include a required lab section). Note that no change to co-requisites are necessary; BIOL 343L is currently a 0-credit lab included as part of BIOL 343, so it is not currently listed as a co-requisite for BIOL 343.

E. RATIONALE AND EXPLANATION. Please provide a narrative addressing the request you are making and why you are making it.

Currently, BIOL 343L is a 0-credit lab section that must be taken concurrently with BIOL 343 (4 credits); BIOL 343 is an elective in this program. The proposed course changes are to “unlink” BIOL 343 and BIOL 343L: change BIOL 343 to 3 credits with no lab requirement and change BIOL 343L to 1 credit with BIOL 343 as a pre- or co-requisite. These changes will provide greater access to BIOL 343 for students who do not need or want the lab component, and will allow for more advanced experimental work in the lab section.

The proposed change to the program is to add BIOL 343L to the list of electives. This changes effectively preserves the status quo: students taking BIOL 343 and BIOL 343L currently receive 4 elective credits in this program.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the major or program?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. At the end of the foundation sequence (BIOL 111, BIOL 112, BIOL 211), students demonstrate improvement in their understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by improved performance on the Biology Major Field Test (MFT) over the incoming first year class performance.</td>
</tr>
<tr>
<td>2. At the end of the program (BS, BA, BS Marine), students demonstrate maintained understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by steady performance overall on the Biology MFT compared to performance at the end of the foundation sequence.</td>
</tr>
<tr>
<td>3. At the end of the program (BS, BA, BS Marine), students demonstrate improvement from the foundation sequence.</td>
<td>Success is demonstrated by improved group performance for some of the Assessment Indicators on the Biology MFT compared to the end of the foundation sequence.</td>
</tr>
</tbody>
</table>
4. At the end of the program (BS, BA, BS Marine), students demonstrate the ability to understand standard scientific communication and to communicate their own work clearly and effectively using a variety of methods. Success is demonstrated by acceptable oral and written reports evaluated by common departmental rubrics.

Additional Outcomes or Comments:

The subject matter of BIOL 343 - the function, evolution and underlying mechanisms of behavior - integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing a broader basis for students seeking more specialized coursework in any one of these areas. Separating the lecture (BIOL 343) and lab (BIOL 343L) components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them.

BIOL 343L focuses on the application of the scientific method to the study of animal behavior - in particular, hypothesis generation and experimental design. Having a cohort of students in BIOL 343L who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

G. IMPACT ON EXISTING PROGRAMS AND COURSES. Please describe the impact of this request on other programs and courses. If you are deleting a program, please describe the effect on all programs that will be impacted; if you are adding or changing a program, please explain any overlap with existing programs at the College.

The proposed changes are expected to increase opportunities for students to take BIOL 343, as it will no longer require the lab section. This increase in access to the course includes not only students in Biology majors and programs, but also those in the Neuroscience Minor and Women's and Gender Studies programs.

H. COSTS ASSOCIATED WITH THE REQUESTED ACTION. List all of the new costs or cost savings (including new faculty/staff requests, library, or equipment) associated with your request.

None expected. BIOL 343L already exists and is typically taught twice/year; no increase in the number of sections offered is expected.

I. CHECKLIST

☒ I have completed all relevant parts of the form.

☒ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☒ I have attached a Course Form for each newly-created or modified course.

☒ (For proposals that affect other departments in any way) I have attached an acknowledgement from the relevant department.

☒ I have provided the complete curriculum for the program, concentration, emphasis, etc., including the description and course list, exactly as it should appear in the catalog.

☒ I have submitted one Signature Form that lists all of the different forms I am submitting.

This form was last updated on 6/6/2013 and replaces all others.
Marine Biology Major Requirements  
Catalog Year: 2014-15  
Degree: Bachelor of Science  
Credit Hours: 64+

“PR” indicates a pre-requisite. “CO” indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses

- BIOL 111 Introduction to Cell and Molecular Biology (3) PR: None; CO: BIOL 111L
- OR
  - HONS 151 Honors Biology I (3) PR: None; CO: HONS 151L
  - HONS 151L Honors Biology I Lab (1) CO: HONS 151

- BIOL 112 Evolution, Form, and Function of Organisms (3) PR: BIOL 111 and 111L; CO: BIOL 112L
- OR
  - HONS 152 Honors Biology II (3) PR: HONS 151 and 151L; CO: HONS 152L
  - HONS 152L Honors Biology II Lab (1) CO: HONS 152

- BIOL 211 Biodiversity, Ecology, and Conservation Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D
- OR
  - BIOL 211D Biodiversity, Ecology, and Conservation Biology Discussion (0) CO: BIOL 211

- BIOL 305 Genetics (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D and MATH 250 or instructor permission

- BIOL 335 Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

- BIOL 337 Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

- BIOL 341 General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

- BIOL 342 Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250; one year of college-level Math and one year of college-level Chemistry

Complete 3 credit hours of 300-level or above Biology courses from the BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST.

- ________________

**BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST**

- BIOL 300 Botany (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

- BIOL 301 Plant Taxonomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

- BIOL 302 Plant Anatomy (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

- BIOL 303 Phycology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250
BIOL 304  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 305L Genetics Lab (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250

BIOL 310 General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 312 Molecular Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250

BIOL 312L Molecular Biology Laboratory (1) PR or CO: BIOL 312 and MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

BIOL 313 Cell Biology (3) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 313L Cell Biology Laboratory (1) PR or CO: BIOL 313 and MATH 250

BIOL 314 Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

BIOL 320 Histology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 321 General and Comparative Physiology PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or instructor permission

BIOL 322 Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 323 Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 332 Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 333 Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 334 Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 336 BIOL 336 Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 338 Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 339 Dinosaur Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 340 Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 343 Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

BIOL 350 Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250
Biol 351  Principles of Neurobiology (3) PR: PSYC 103 and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D or PSYC 214; PR or CO: MATH 250

Biol 352  Neurobiology and Behavior (3) PR: BIOL 351 or PSYC 351 or PSYC 214; PR or CO: MATH 250

Biol 353  Hormones and Behavior (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

Biol 354  Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 211 and PSYC 220 or PSYC 250; and instructor permission

Biol 356  Comparative Biomechanics (4) PR: BIOL 111/111L or HONS 151/151L and BIOL 112/112L or HONS 152/152L, and BIOL 211; PR or CO: BIOL 305, MATH 250 and PHYS 101/101L or 111/111L; or instructor permission.

Biol 357  Oceanographic Research (4) PR: BIOL 342 and instructor permission; PR or CO: MATH 250

Biol 360  Introduction to Biometry (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

Biol 396  Biophysical Modeling of Excitable Cells (3) PR: BIOL 211 and PHYS 102/102L or PHYS 112/112L or HONS 158/158L or permission of instructor

Biol 399  Tutorial (1-3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; junior standing and tutor and department chair permission; PR or CO: MATH 250

Biol 406  Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

Biol 410  Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; BIOL 310 and one year of Chemistry; or CO: BIOL 305 and MATH 250

Biol 411  Microtechnique and Cryochemistry (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

Biol 412  Capstone in Molecular Biology (3) PR: BIOL 111/111L or HONS 151/151L, BIOL 112/112L or HONS 152/152L, BIOL 211/211D, BIOL 305, BIOL 312, MATH 111 PR or CO: CHEM 351, MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

Biol 414  Environmental Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; or CO: BIOL 305 and BIOL 312 or BIOL 313 or CHEM 351 and MATH 250

Biol 420  General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

Biol 421  Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

Biol 444  Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

Biol 445  Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

Biol 446  Special Topics in Neuroscience (3) PR: Junior or senior standing and instructor permission; PR or CO: MATH 250

Biol 447  Seminar in Neuroscience (3) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352; CO: BIOL 448 or PSYC 448; PR or CO: MATH 250

Biol 448  Bachelor’s Essay in Neuroscience (6) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352 and permission of student’s major department and the neuroscience program director; PR or CO: MATH 250

Biol 449  Biology of Coral Reefs (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed or instructor approval and department chair permission; PR or CO: MATH 250
BIOL 450 Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 451 Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: BIOL 305 and MATH 250

BIOL 452 Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.50 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250

BIOL 453 Special Topics (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 455 Seminar in Molecular Biology (2) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305, 312 and 313; PR or CO: MATH 250

BIOL 499 Bachelor's Essay (6) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; instructor and department chair permission; PR or CO: MATH 250

BIOL 501 Biology of the Crustacea (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 337; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 502 Special Topics in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 503 Special Topics in Ecology (3-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Chemistry Requirement

☐ CHEM 111 Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a prerequisite, they are required to take MATH 111 as a corequisite; CO: CHEM 111L

☐ CHEM 111L Principles of Chemistry Lab (1) CO: CHEM 111L

AND

☐ CHEM 112 Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)

☐ CHEM 112L Principles of Chemistry Lab (1) CO: CHEM 112L

AND

☐ CHEM 220 Fundamentals of Analytical Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 220L

☐ CHEM 220L Fundamentals of Analytical Chemistry Lab (2) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 220

OR

☐ CHEM 231 Organic Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 231L

☐ CHEM 231L Introduction to Organic Chemistry Laboratory Techniques (1) CO: CHEM 231L

AND

☐ CHEM 232 Organic Chemistry (3) PR: CHEM 231 and CHEM 231L; CO: CHEM 232L

☐ CHEM 232L Organic Synthesis and Analysis (1) CO: CHEM 232

Physics Requirement

☐ PHYS 101 Introductory Physics (3) PR: None; CO or PR: PHYS 101L

☐ PHYS 101L Introductory Physics Lab (1) CO: PHYS 101

AND

☐ PHYS 102 Introductory Physics II (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L

☐ PHYS 102L Introductory Physics Lab (1) CO: PHYS 102
□ PHYS 111  General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L
□ PHYS 111L  General Physics I Lab (1) CO: PHYS 111

AND
□ PHYS 112  General Physics II (3) PR: PHYS 111 or HONS 157; CO or PR: MATH 220 or equivalent or instructor permission; CO: PHYS 112L
□ PHYS 112L  General Physics II Lab (1) CO: PHYS 112

Mathematics Requirement
□ MATH 120  Introductory Calculus (4) PR: Placement or C- or better in MATH 111
□ MATH 250  Statistical Methods I (3) PR: MATH 105 with a C- grade or better or MATH 111 or MATH 120 or permission of instructor

Complete one of the following Geology courses:

□

GEOL 101  Dynamic Earth (3) PR: None; CO: GEOL 101L
GEOL 101L  Dynamic Earth Lab (1) CO: GEOL 101

GEOL 103  Environmental Geology (3) PR: None; CO: GEOL 103L
GEOL 103L  Environmental Geology Lab (1) CO: GEOL 103

GEOL 107*  Introduction to Coastal and Marine Geology (3) PR: None.

Note: *This course may not be used to fulfill natural science general education or Geology major requirements. Students may not receive credit for both GEOL 107 and 257. This course is recommended for Marine Biology majors.

Notes:

• MATH 250 is a prerequisite for all 300-level BIOL courses.

• CHEM 220/220L are recommended courses.

• Honors students can take the alternative sequence of HONS191/HONS191L, HONS 192/HONS192L, HONS293/HONS293L, and HONS294/HONS294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/CHEM 232L

• Honors students can take the alternative sequence of HONS157/HONS157L and HONS 158/HONS158L in lieu of PHYS 111/111L and PHYS112/112L
F. Add BIOL 343L to Biology BS with concentration in molecular biology

Instructions:
- Please fill out all of the portions of the form that are specified in section B. You must do this before your request can move forward!
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, please start by checking the detailed instructions on the website.
- Please feel free to contact the committee chair with any remaining questions you might have.

A. CONTACT INFORMATION.

Name: Melissa Hughes  Phone: 953-6557  Email: hughesm@cofc.edu

School: SSM  Department or Program: Biology

Name and Acronym of Major: Biology BS with concentration in molecular biology

B. CATEGORY OF REVIEW. Please check all that apply, then fill out the specified parts of the form.

☐ Change Request (fill out all sections)
   ☐ Add an existing course to requirements or electives
   ☐ Add a new course to requirements or electives (attach completed course form for each)
   ☐ Delete courses from requirements or electives
   ☐ Add or modify concentration*
   ☐ Add or modify cognate*

*Note: Only concentrations and cognates requiring 18 or more credit hours will be tracked in Banner and Degree Works and noted on the transcript.

☐ Terminate Program (fill out E, G, H, and I)
   ☐ Terminate degree
   ☐ Terminate major
   ☐ Terminate concentration
   ☐ Terminate cognate

C. GENERAL INFORMATION

Number of Current Credit Hours (for existing program): ______72+_____
Number of Proposed Credit Hours (for changed program): ______72+_____
Catalog Year in which changes will take effect: FALL __2015____

D. CURRICULUM. Please list every change you are making below AND attach the current Program of Study Worksheet for this major (http://registrar.cofc.edu/program-of-study-resources/program-of-study-worksheets/index.php) with changes marked in RED. Additions should show where the course will be inserted, deletions should be noted by crossing out the course, and moves indicated with arrows. Distinguish between required and elective courses, and note any prerequisites, co-requisites, sequencing, or other restrictions. Provide the catalog description and course list exactly as they should appear in the catalog. For each new course, submit the Curriculum Committee’s Course Form and a sample syllabus.

This form was last updated on 6/6/2013 and replaces all others.
(1) Change to be made: Add BIOL 343L
   Required or elective: Elective
   Course title: Animal Behavior Lab
   Restrictions (pre-requisites, co-requisites, majors only, etc.):
   Co-requisite or prerequisite: MATH 250 or equivalent course in statistics or permission of instructor; and BIOL 343 or permission of instructor.
   Catalog description: An introduction to field and laboratory analyses of behavior in vertebrate and invertebrate animals. Laboratory three hours per week.
   Course list: BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

(2) Change to be made: change credits for BIOL 343 from 4 to 3 (as it will no longer include a required lab section). Note that no change to co-requisites are necessary; BIOL 343L is currently a 0-credit lab included as part of BIOL 343, so it is not currently listed as a co-requisite for BIOL 343.

E. RATIONALE AND EXPLANATION. Please provide a narrative addressing the request you are making and why you are making it.

Currently, BIOL 343L is a 0-credit lab section that must be taken concurrently with BIOL 343 (4 credits); BIOL 343 is an elective in this program. The proposed course changes are to “unlink” BIOL 343 and BIOL 343L: change BIOL 343 to 3 credits with no lab requirement; and change BIOL 343L to 1 credit with BIOL 343 as a pre- or co-requisite. These changes will provide greater access to BIOL 343 for students who do not need or want the lab component, and will allow for more advanced experimental work in the lab section.

The proposed change to the program is to add BIOL 343L to the list of electives. This changes effectively preserves the status quo: students taking BIOL 343 and BIOL 343L currently receive 4 elective credits in this program.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the major or program?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. At the end of the foundation sequence (BIOL 111, BIOL 112, BIOL 211), students demonstrate improvement in their understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by improved performance on the Biology Major Field Test (MFT) over the incoming first year class performance.</td>
</tr>
<tr>
<td>2. At the end of the program (BS, BA, BS Marine), students demonstrate maintained understanding of the core concepts and competencies in biology.</td>
<td>Success is demonstrated by steady performance overall on the Biology MFT compared to performance at the end of the foundation sequence.</td>
</tr>
<tr>
<td>3. At the end of the program (BS, BA, BS Marine), students demonstrate improvement from the foundation sequence.</td>
<td>Success is demonstrated by improved group performance for some of the Assessment Indicators on the Biology MFT compared to the end of the foundation sequence.</td>
</tr>
</tbody>
</table>
4. At the end of the program (BS, BA, BS Marine), students demonstrate the ability to understand standard scientific communication and to communicate their own work clearly and effectively using a variety of methods. Success is demonstrated by acceptable oral and written reports evaluated by common departmental rubrics.

Additional Outcomes or Comments:

The subject matter of BIOL 343 – the function, evolution and underlying mechanisms of behavior – integrates genetics, physiology, ecology and evolution, thus building on the Biology major foundation sequence (BIOL 111, 112, 211) and potentially providing a broader basis for students seeking more specialized coursework in any one of these areas. Separating the lecture (BIOL 343) and lab (BIOL 343L) components, thereby relaxing the strict enrollment caps necessary for the lab section, will allow more students to access this course earlier in their careers, when it may be more beneficial for them.

BIOL 343L focuses on the application of the scientific method to the study of animal behavior – in particular, hypothesis generation and experimental design. Having a cohort of students in BIOL 343L who have already completed BIOL 343 will provide numerous opportunities for peer-to-peer learning, and enhance the level of experimental analyses possible in the lab.

G. IMPACT ON EXISTING PROGRAMS AND COURSES. Please describe the impact of this request on other programs and courses. If you are deleting a program, please describe the effect on all programs that will be impacted; if you are adding or changing a program, please explain any overlap with existing programs at the College.

The proposed changes are expected to increase opportunities for students to take BIOL 343, as it will no longer require the lab section. This increase in access to the course includes not only students in Biology majors and programs, but also those in the Neuroscience Minor and Women’s and Gender Studies programs.

H. COSTS ASSOCIATED WITH THE REQUESTED ACTION. List all of the new costs or cost savings (including new faculty/staff requests, library, or equipment) associated with your request.

None expected. BIOL 343L already exists and is typically taught twice/year; no increase in the number of sections offered is expected.

I. CHECKLIST

- I have completed all relevant parts of the form.
- I have attached a cover letter that describes my request and lists all the documents I am submitting.
- I have attached a Course Form for each newly-created or modified course.
- (For proposals that affect other departments in any way) I have attached an acknowledgement from the relevant department.
- I have provided the complete curriculum for the program, concentration, emphasis, etc., including the description and course list, exactly as it should appear in the catalog.
- I have submitted one Signature Form that lists all of the different forms I am submitting.

This form was last updated on 6/6/2013 and replaces all others.
Biology Major with Concentration in Molecular Biology Requirements
Catalog Year: 2014-15
Degree: Bachelor of Science
Credit Hours: 72+

“PR” indicates a pre-requisite. “CO” indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>PR</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111</td>
<td>Introduction to Cell and Molecular Biology</td>
<td>None</td>
<td>BIOL 111L</td>
</tr>
<tr>
<td>BIOL 111L</td>
<td>Introduction to Cell and Molecular Biology Lab</td>
<td></td>
<td>BIOL 111</td>
</tr>
<tr>
<td>OR</td>
<td>HONS 151</td>
<td>None</td>
<td>HONS 151L</td>
</tr>
<tr>
<td>HONS 151L</td>
<td>Honors Biology I Lab</td>
<td></td>
<td>HONS 151</td>
</tr>
<tr>
<td>BIOL 112</td>
<td>Evolution, Form, and Function of Organisms</td>
<td>BIOL 111L</td>
<td>HONS 151</td>
</tr>
<tr>
<td>BIOL 112L</td>
<td>Evolution, Form, and Function of Organisms Lab</td>
<td></td>
<td>BIOL 112</td>
</tr>
<tr>
<td>OR</td>
<td>HONS 152</td>
<td>HONS 151</td>
<td>BIOL 151L</td>
</tr>
<tr>
<td>HONS 152L</td>
<td>Honors Biology II Lab</td>
<td></td>
<td>HONS 152</td>
</tr>
<tr>
<td>BIOL 211</td>
<td>Biodiversity, Ecology, and Conservation Biology</td>
<td>BIOL 111L</td>
<td>HONS 151</td>
</tr>
<tr>
<td>BIOL 211D</td>
<td>Biodiversity, Ecology, and Conservation Biology Discussion</td>
<td></td>
<td>BIOL 211</td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Genetics</td>
<td>BIOL 111L</td>
<td>HONS 151</td>
</tr>
<tr>
<td>BIOL 305L</td>
<td>Genetics Lab</td>
<td>BIOL 111L</td>
<td>HONS 151</td>
</tr>
<tr>
<td>BIOL 312</td>
<td>Molecular Biology</td>
<td>One year of Chemistry and BIOL 111L or HONS 151L and BIOL 112L or HONS 152L and 152L;</td>
<td>BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250</td>
</tr>
<tr>
<td>BIOL 313</td>
<td>Cell Biology</td>
<td>One year of Chemistry and BIOL 111L or HONS 151L and BIOL 112L or HONS 152L and 152L;</td>
<td>CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L</td>
</tr>
<tr>
<td>BIOL 313L</td>
<td>Cell Biology Laboratory</td>
<td></td>
<td>BIOL 313 and MATH 250</td>
</tr>
<tr>
<td>BIOL 412</td>
<td>Capstone in Molecular Biology</td>
<td>BIOL 111L/111L or HONS 151L/151L, BIOL 112/112L or HONS 152/152L, BIOL 211/211D, BIOL 305, BIOL 312, MATH 111;</td>
<td>PR or CO: CHEM 351, MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.</td>
</tr>
</tbody>
</table>

Complete 8 credit hours of 300-level or above BIOL courses from the BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST for a total of four courses with labs (independent study, tutorial, Bachelor's Essay, or BIOL 450 and 451 with labs do not fulfill the lab requirement).

**BIOLOGY 300-LEVEL AND ABOVE ELECTIVES LIST**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>PR</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 300</td>
<td>Botany</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D;</td>
<td>BIOL 305 and MATH 250</td>
</tr>
<tr>
<td>BIOL 301</td>
<td>Plant Taxonomy</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D;</td>
<td>BIOL 305 and MATH 250</td>
</tr>
<tr>
<td>BIOL 302</td>
<td>Plant Anatomy</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D;</td>
<td>BIOL 305 and MATH 250</td>
</tr>
<tr>
<td>BIOL 303</td>
<td>Phycology</td>
<td>BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D;</td>
<td>BIOL 305 and MATH 250</td>
</tr>
</tbody>
</table>
BIOL 304  Plant Physiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 310  General Microbiology (4) PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250, BIOL 305 or CHEM 232 and 232L

BIOL 314  Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

BIOL 320  Histology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 321  General and Comparative Physiology PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or instructor permission

BIOL 322  Developmental Biology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 323  Comparative Anatomy of Vertebrates (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 332  Vertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 333  Ornithology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 334  Herpetology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 335  Biology of Fishes (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 336  Parasitology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 337  Invertebrate Zoology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 338  Entomology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 339  Dinosaur Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 340  Zoogeography (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 341  General Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 342  Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250; one year of college-level Math and one year of college-level Chemistry

Change to (3)

BIOL 343  Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 343L Animal Behavior Lab (1) PR or CO: BIOL 343 and MATH 250

BIOL 350  Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250
BIOL 351 Principles of Neurobiology (3) PR: PSYC 103 and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D or PSYC 214; PR or CO: MATH 250

BIOL 352 Neurobiology and Behavior (3) PR: BIOL 351 or PSYC 351 or PSYC 214; PR or CO: MATH 250

BIOL 353 Hormones and Behavior (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 354 Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 211 and PSYC 220 or PSYC 250; and instructor permission

BIOL 356 Comparative Biomechanics (4) PR: BIOL 111/111L or HONS 151/151L and BIOL 112/112L or HONS 152/152L and BIOL 211; PR or CO: BIOL 305, MATH 250 and PHYS 101/101L or 111/111L; or instructor permission.

BIOL 357 Oceanographic Research (4) PR: BIOL 342 and instructor permission; PR or CO: MATH 250

BIOL 360 Introduction to Biometry (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 396 Biophysical Modeling of Excitable Cells (3) PR: BIOL 211 and PHYS 102/102L or PHYS 112/112L or HONS 15B/158L or permission of instructor

BIOL 399 Tutorial (1-3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; junior standing and tutor and department chair permission; PR or CO: MATH 250

BIOL 406 Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

BIOL 410 Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D, BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 411 Microtechnique and Cytotechnology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 414 Environmental Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and BIOL 310 or BIOL 313 or CHEM 351 and MATH 250

BIOL 420 General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

BIOL 421 Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

BIOL 444 Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 445 Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

BIOL 446 Special Topics in Neuroscience (3) PR: Junior or senior standing and instructor permission; PR or CO: MATH 250

BIOL 447 Seminar in Neuroscience (3) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352; CO: BIOL 448 or PSYC 448; PR or CO: MATH 250

BIOL 448 Bachelor's Essay in Neuroscience (6) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352 and permission of student's major department and the neuroscience program director; PR or CO: MATH 250

BIOL 449 Biology of Coral Reefs (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 450 Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250
Biol 451: Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

Biol 452: Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.50 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250

Biol 453: Special Topics (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250

Biol 499: Bachelor’s Essay (6) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL; instructor and department chair permission; PR or CO: MATH 250

Biol 501: Biology of the Crustacea (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 337; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Biol 502: Special Topics in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Biol 503: Special Topics in Ecology (3-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.00 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Chemistry Requirement

☐ Chem 111: Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a prerequisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L

☐ Chem 111L: Principles of Chemistry Lab (1) CO: CHEM 111

☐ Chem 112: Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)

☐ Chem 112L: Principles of Chemistry Lab (1) CO: CHEM 112

☐ Chem 231: Organic Chemistry (3) PR: CHEM 112 and CHEM 112L or HONS 154 and HONS 154L; CO: CHEM 231L

☐ Chem 231L: Introduction to Organic Chemistry Laboratory Techniques (1) CO: CHEM 231

☐ Chem 232: Organic Chemistry (3) PR: CHEM 231 and CHEM 231L; CO: CHEM 232L

☐ Chem 232L: Organic Synthesis and Analysis (1) CO: CHEM 232

☐ Chem 351: Biochemistry (3) PR: CHEM 232, CHEM 232L

☐ Chem 352: Biochemistry II (3) PR: CHEM 351

☐ Chem 354L: Biochemistry II Laboratory (1) PR: CHEM 351

Physics Requirement

☐ Phys 101: Introductory Physics (3) PR: None; CO or PR: PHYS 101L

☐ Phys 101L: Introductory Physics Lab (1) CO: PHYS 101

AND

☐ Phys 102: Introductory Physics II (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L

☐ Phys 102L: Introductory Physics Lab (1) CO: PHYS 102

OR

☐ Phys 111: General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L

☐ Phys 111L: General Physics I Lab (1) CO: PHYS 111

AND

☐ Phys 112: General Physics II (3) PR: PHYS 111 or HONS 157; CO or PR: MATH 220 or equivalent or instructor permission; CO: PHYS 112L

☐ Phys 112L: General Physics II Lab (1) CO: PHYS 112
Mathematics Requirement

☐ MATH 120 Introductory Calculus (4) PR: Placement or C. or better in MATH 111

☐ MATH 250 Statistical Methods I (3) PR: MATH 105 with a C-grade or better or MATH 111 or MATH 120 or permission of instructor

Notes:

- MATH 250 is a prerequisite for all 300-level BIOL courses.
- CHEM 220/220L are recommended courses.
- Honors students can take the alternative sequence of HONS191/HONS191L, HONS 192/HONS192L, HONS293/HONS293L, and HONS294/HONS294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/CHEM 232L.
- Honors students can take the alternative sequence of HONS 157/HONS 157L and HONS 158/HONS 158L in lieu of PHYS 111/111L and PHYS112/112L.
**RE: bio curric comm & neurosci**

Triblehorn, Jeffrey D  
**Sent:** Friday, September 05, 2014 1:34 PM  
**To:** Hughes, Melissa

*Note: The lecture component of Animal Behavior (BIOL 343) is already listed as an elective for the Neuroscience Minor, so no further change is necessary.*

Melissa

I am still chairing the departmental curriculum committee as well as being the director of the neuroscience program (plus chairing the Faculty R&D committee and serving as full member on IACUC).

I remember you talking about this change. I don’t see any issues; I believe the Animal Behavior lecture alone would count just the same as it did with the lab. I think the easiest way to incorporate the change into the neuroscience minor is to list the Animal Behavior lecture but not the lab into the General electives for the minor (that way they can’t use the lab as a second elective). There is no lab requirement for the minor outside the Bachelor’s Essay.

Some point down the line when we get back to at least discussing the major (it is not dead yet, just on vacation), the lab component would be included as a lab option (if we still have a lab requirement in the major).

Right now, Genetics (BIOL 305) is one of the few general elective options that Psychology students are able to take for the neuroscience minors. If Psychology students could also have Animal Behavior as another option, I think you would get more of them in your class. I also think they will enjoy it more (that is not a knock on Genetics, the course or the people teaching in it, just what I know about the interests of many psychology majors).

So go ahead and send me the paperwork when you are ready and I will start working it through. I doubt there will be a problem. Do you need the letter before you submit it to the departmental curriculum committee or could I write it once it comes to the committee but can have it so you can my letter when it goes to the department?

Thanks for letting me know and let me know if you need anything help along the way.

Jeff

Dr. Jeffrey D. Triblehorn  
Assistant Professor  
Department of Biology  
Program in Neuroscience  
College of Charleston  
RHSC 205  
843-953-5848

---

**From:** Hughes, Melissa  
**Sent:** Friday, September 05, 2014 1:20 PM  
**To:** Triblehorn, Jeffrey D  
**Subject:** bio curric comm & neurosci

Hi Jeff,

I hear you’re taking on the role of Neurosci Director - congrats!

I’m going to be submitting a ‘change of course’ proposal (actually, 2) to the bio curriculum committee, ultimately to go to the Senate, to separate animal behavior lecture and lab. Assuming you’re still chair of the curriculum committee, I wanted to give you a heads-up that that’s coming down the pike; deadline to get to the Senate is 12/8.

And regardless of whether you’re still curric comm chair, in your new role of Neurosci Director, I also need a note...
from you acknowledging this change.

More details: currently BIOL 343 is listed as a 4-credit class (the lab is a 0-credit co-req); I am going to change BIOL 343 to 3 credits (with no lab co-req), BIOL 343L to 1-credit, and BIOL 343L will have BIOL 343 as a pre- or co-req. My hope is to make 343 available to more students (who don’t need the additional lab component). BIOL 343 is listed in the current catalog as a ‘general elective’ to the Neuro minor. I don’t foresee any negative impacts on neuro students for making these changes; if anything, the course might be more available to non-bio majors in the neuro program.

Let me know if you have any questions about any of this.

Cheers,
Melissa

--

Melissa Hughes
Professor
Department of Biology
College of Charleston
66 George St.
Charleston, SC 29424 USA

hughesm@cofc.edu

843.953.6557
843.953.5453 (fax)
Dear Melissa,

BIOL 343 is listed as a potential elective for the Computational Neuroscience concentration. As you mentioned, I do not foresee any negative impact on this concentration due to the proposed change. Please let me know if additional paperwork is needed from my side to help you with your plan.

Best regards,
Sorinel Oprisan

---

From: <Hughes>, Melissa <HughesM@cofc.edu>
Date: Friday, September 5, 2014 at 1:32 PM
To: Sorin <oprisans@cofc.edu>
Subject: computational neuro

Hi Sorinel,

Are you the right person to be contacting about the Computational Neuroscience concentration in Physics?

I teach BIOL 343, which is listed as an elective in the concentration. I'm planning on making some changes to the course (details below); for the Senate forms, I need an acknowledgement from Computational Neuroscience that you're aware that I'm making these changes.

Currently, BIOL 343 is a 4-credit course, with a co-requisite lab section (listed as a 0-credit course, BIOL 343L). My plan is to "unlink" the lecture and lab: change BIOL 343 to a 3-credit course with no requirement for a lab section; and change BIOL 343L to a 1-credit course which has BIOL 343 as a pre- or co-req. My hope is to make 343 available to more students (who don't need the additional lab component). I don't foresee any negative impacts on your students for making these changes; if anything, the course without the lab is likely to be more available to non-bio majors.

Please let me know if you have any questions, or if I'm need to contact anyone else in Physics about this. Otherwise, a quick note (email is fine, I think) saying that the program is aware of these changes is all I need.

Thanks,
Melissa

---

Melissa Hughes
Professor
Department of Biology
College of Charleston
66 George St.
Charleston, SC 29424 USA

hughesm@cofc.edu

843.953.6557
843.953.5453 (fax)
Hi, Melissa, I agree on all counts; this is a savvy change and, with making the lab optional, it's a positive for WGS. I'm sorry that it didn't make its way into the catalog (yet), but Andrea DeMaria (cc'd here) and I are working to get all the catalog curricular work cleaned up this semester. When this is complete, BIOL 343 should be listed.

(Andrea, as we do this, we should keep in mind that BIOL 343 will be three credits instead of four.)

Thanks, y'all!
David

----------
David Moscowitz, Ph.D.
Department of Communication
Interim Director, Women's and Gender Studies
College of Charleston
66 George Street (Office at 5 College Way #101)
Charleston, SC 29424
http://communication.cofc.edu/about/faculty-staff-listing/moscowitz-david.php

"We are what we pretend to be, so we must be careful about what we pretend to be."
-- Kurt Vonnegut

Please consider the environment before deciding to print this email.

From: <Hughes>, Melissa <HughesM@cofc.edu>
Date: Friday, September 5, 2014 2:06 PM
To: "Moscowitz, David M" <moscowitzd@cofc.edu>, Christopher Korey <KoreyC@cofc.edu>
Subject: RE: Animal Behavior Approved

Hi folks,

Last spring, Animal Behavior (BIOL 343) was approved as a WGS elective. Is that something that needs to be renewed each year, or will it land in the catalog or some other official listing at some point?

I'm actually asking the question now because I'm about to submit the paperwork to make some changes to the course (details below), and I need a note from any programs that use the course acknowledging that you're aware of the proposed changes. In the process of tracking down the programs that use BIOL 343, I noticed that it's not listed anywhere for WGS - hence the question above.

Here's what I want to do with the course. Currently, BIOL 343 is a 4-credit course, with a co-requisite lab section (listed as a 0-credit course, BIOL 343L). My plan is to "unlink" the lecture and lab: change BIOL 343 to a 3-credit course with no requirement for a lab section; and change BIOL 343L to a 1-credit course which has BIOL 343 as a pre- or co-req. My hope is to make 343 available to more students (who don't need the additional lab component). I don't foresee any negative impacts on WGS students for making these changes; if anything, the course without the lab is likely to be more available to non-bio majors.

Since WGS doesn't list the course anywhere currently, I don't think the Senate officially needs any acknowledgement from WGS about this change, but I am hoping to keep the course available for WGS students - so I wanted to make sure you were in the
Hi Melissa,

I just wanted to let you know that Animal Behavior was approved for cross-listing as a WGS elective. We are exciting to offer this to the growing number of Biology-WGS students. Sorry for the delay, I had meant to email sooner, but it got lost in my to-do lists. Have a great weekend.

Chris

---

Christopher Korey, Ph.D.
Director, First Year Experience
Associate Professor of Biology
Program in Neuroscience
College of Charleston

New Student Programs Office: Lightsey Annex, Room 187
P: 843-953-7178 | fye.cofc.edu

Biology Office: Hollings Science Center, Room 217C
www.koreyc.people.cofc.edu | www.neurofly.com
J. Signature page

FACULTY CURRICULUM COMMITTEE
SIGNATURE PAGE

- In section A, list ALL of the forms covered by this signature page. If you submit a form that is not listed in A, your proposal will be held back until we receive a new, updated signature page.
- You must obtain the signature of your department chair and dean before submitting your proposal.

A. FORMS COVERED BY THIS SIGNATURE PAGE. List each form you are submitting—for instance, PSYC 383, Course Form; PSYC, Change of Major Form; PSYC, Change of Minor Form.

Change of course forms: Animal Behavior (BIOL 343); Animal Behavior Lab (BIOL 343L)  
Change of major/program forms: Biology BS; Biology BA; Marine Biology BS; Biology BS with concentration in Molecular Biology  
Additional acknowledgments: Neuroscience Minor; Physics, Computational Neuroscience concentration; Women’s and Gender Studies

B. APPROVAL AND SIGNATURES.

1. Signature of Department Chair or Program Director:

   [Signature]

   Date: 11/3/14

2. Signature of Academic Dean:

   [Signature]

   Date: 11/3/14

3. Signature of Provost:

   [Signature]

   Date: 12/23/14

4. Signature of Business Affairs (only for course fees):

   [Signature]

   Date: ________________

   □ fee approved on __________  
   □ BOT approval pending

5. Signature of Curriculum Committee Chair:

   [Signature]

   Date: ________________

6. Signature of Budget Committee Chair (only for new programs):

   [Signature]

   Date: ________________

7. Signature of Academic Planning Committee Chair (only for new programs):

   [Signature]

   Date: ________________

8. Signature of Faculty Senate Secretary:

   [Signature]

   Date: ________________

Date Approved by Faculty Senate: ________________
BIOL 343 Course Change and associated curriculum changes:
A worksheet for the B.S. Biology Teaching Option is necessary or at least further discussion of this is required. The description for this major requirement is referenced as “at least one course from the following” in the catalog, but in reality, this a 4 credit hours major requirement. So, with this change, the “at least one course from the following” requirement description needs to change to “at least 4 credit hours from the following” and then include BIOL 343L. Or, the BIOL 343 needs to be completely removed from this 4 credit hour requirement.

And dependent on the manner in which this section changes or not, the number of required hours in the “3-7 credit hours of any 300-level course listed above or from the following” major section may also need to change since this 3-7 credit hour range is also dependent upon the above 4 credit hours requirement in the current “at least one course from the following” section.

Basically, this entire major is defined and set-up to require at least 34 credit hours of “biology” coursework which includes at least 4 credit hours rather than one course from BIOL 310, 322, 23, 332, 333, 334, 335, 336, 337, 338, 343, and the fact that BIOL 304 may be used to fulfill more than one requirement within the set of major requirements.

Also, here is the Biology Teaching Option (B.S.) program of study worksheet.

Thanks!
Franklin

Franklin J. Czwazka, M.A.
Catalog Manager | Office of the Registrar, College of Charleston
66 George Street | Charleston, SC 29424
843.953.5421 (voice) | 843.953.6560 (fax) | czwazkaf@cofc.edu
Office of the Registrar website: http://registrar.cofc.edu/
Academic Catalogs: http://catalogs.cofc.edu/
Treasurer | Carolina Association of Collegiate Registrars and Admissions Officers (CACRAO)
Lynne & Bonnie,

After talking with Jerry, it is clear to me that two unrelated issues have inadvertently gotten intertwined here: a) the proposed change to Biol 343L Animal Behavior, and b) a consequence of the "double-hitter" feature of Biol 304 Plant Physiology to the EDBL Biology Teaching Option.

This second item will require some further discussion within Biology to resolve (and then submit required forms to make any amendments), but this needn’t hold up progress on the first item.

Jerry’s suggestion of a simple change to the EDBL language should clarify that for the teaching option the significance of Biol 343/L remains unchanged: if students want to use that course to satisfy their organismal biology requirement, they should take both the lecture and the lab (status quo ante):

In the Teaching Option requirement, explain the reference to Biol 343 by changing:
- -- from “Complete at least one course from the following: 310, 322, 323, 332, 333, 334, 335, 336, 337, 338 or 343 to
- - to ”Complete at least 4 hours from the following” 310, 322, 323, 332, 333, 334, 335, 336, 337, 338, or 343 and 343L.  [make sure that comma is added after 338!]

Please add this to the packet for Biol 343/L.

Thanks,
Jaap

-----
Jaap Hillienius
Professor & Chair
Department of Biology
College of Charleston
66 George Street
Charleston, SC 29424
USA

T: (843) 953-5504
F: (843) 953-5453
E: hillieniusw@cofc.edu
<CzwazkaF@cofc.edu>, "Van Sickle, Meta L" <VansickleM@cofc.edu>, Willem Jacob Hillenius <hilleniusw@cofc.edu>

Subject: RE: BIOL 343 and program changes

BIOL 314, 350, 406, 445, 447, 450, 451, and 452 are 3 credit hours non-lab courses. This would also include any potential BIOL 3MM transfer credits students may have been awarded.

Jerry Mackeldon | Degree Works Curriculum Scribe | College of Charleston
(P): 843.953.5678 | (F): 843.953.6560

From: Peters, John S
Sent: Monday, December 22, 2014 9:56 AM
To: Mackeldon, Jerry W; Hughes, Melissa; Triblehorn, Jeffrey D; Boyd, Cathy
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Van Sickle, Meta L; Hillenius, Willem Jacob

Subject: RE: BIOL 343 and program changes

I’m still confused about your point Jerry. This would just mean that in the 7 hours they complete, one of the course would have to be a 4 hour course (which would have a lab).

If BIOL 304 is taken, then:
1st lab - one from BIOL 305L, 312L, 313L
2nd lab - one from BIOL 310, 322, 323, 332, 334, 335, 336, 337, 338, 343
3rd lab - and BIOL 304
then - 7 additional hours from: 300, 301, 302, 303, 304, 305L, 310, 312, 312L, 313, 314, 313L, 340, 341, 342, 343, 350, 354, 356, 406, 410, 420, 421, 444, 445, 447, 450, 451, 452, 453, 502, 503. -- AND ONE WILL HAVE TO BE A 4 HOUR COURSE WITH A LAB. They would need this anyway to meet the 7 hours.

Also, I do not ever recall that the Bio dept. specifically exempted the teaching option from the 4 lab courses. My understand was the 4 lab courses was a requirement of all BS Biology majors.

J

John S. Peters, Ph. D.
College of Charleston
Department of Biology
66 George St.
Charleston, SC 29424
Office – 142 SSMB
www.petersj.people.cofc.edu

From: Mackeldon, Jerry W
Sent: Monday, December 22, 2014 9:30 AM
To: Peters, John S; Hughes, Melissa; Triblehorn, Jeffrey D; Boyd, Cathy
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Van Sickle, Meta L; Hillenius, Willem Jacob

Subject: RE: BIOL 343 and program changes

Regarding the addition of requiring 4 lab courses, I understand that students are being advised otherwise, but it is not a matter of students being permitted to take 4 labs, but rather, it is currently possible for them to complete this major by not taking 4 lab courses since it was stated years ago that these students were not required to take 4 lab courses. Basically, it hinges on whether or not students complete BIOL 304. If they do, then requirement is that they complete 7 additional hours from the list where BIOL 314, 350, 06, 445, 447, 450, 451, or 452, or any future 3 credit hour BIOL course could be taken. As you pointed out, this is not a degree audit programming issue as this is currently being audited for the regular B.A. and B.S. BIOL majors.
If BIOL 304 is taken, then:
1st lab - one from BIOL 305L, 312L, 313L
2nd lab - one from BIOL 310, 322, 323, 332, 334, 335, 336, 337, 338, 343
3rd lab - and BIOL 304

However, if BIOL 304 is NOT taken, then:
1st lab - one from BIOL 305L, 312L, 313L
2nd lab - one from BIOL 310, 322, 323, 332, 334, 335, 336, 337, 338, 343
3rd lab - one from BIOL 321
4th lab - one from BIOL 300, 302, 303

Jerry Mackeldon | Degree Works Curriculum Scribe | College of Charleston
(P): 843.953.5678 | (F): 843.953.6560

From: Peters, John S
Sent: Friday, December 19, 2014 3:56 PM
To: Hughes, Melissa; Mackeldon, Jerry W; Tribblehorn, Jeffrey D; Boyd, Cathy
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Van Sickle, Meta L; Hillenius, Willem Jacob
Subject: RE: BIOL 343 and program changes

Hi Jerry
I think the change you propose below would work fine. Just include 343L in the list.

As far as I have always advised student FOUR 300 Level labs is a requirement of the department. Under every permutation here students can take 4 labs and meet the 19 hr 300 level course requirement indicated in the current worksheet. Seems to me that all that is needed is a stipulation in the worksheet/catalog that FOUR 300 level labs are required. Seems like this would be easy to monitor in the degree audit. We already do it for all bio majors.

John

John S. Peters, Ph. D.
College of Charleston
Department of Biology
66 George St.
Charleston, SC 29424
Office - 142 SSMB
www.petersj.people.cofc.edu

Correct, they are only related if the new BIOL 343L is not added to the current 310, 322, 323, 332, 333, 334, 335, 336, 337, 338, or 343 list.

- - from “Complete at least one course from the following: 310, 322, 323, 332, 333, 334, 335, 336, 337, 338, 343 to
If 343L is not added, it would then possible, though not probable, that students could then complete this major by taking only 2 lab courses (BIOL 304 and 305L, or 312L, or 313L). And the 3-7 range of credit hours will have to be increased by 1 in order to compensate for having only taken the 3 credit hours BIOL 343 course...the total number of biology coursework credit hours must still be at least 34 hours. This would be especially wordy in the program of study course catalog section, and I’m certain, more chaos would be added to the degree audit programming in order for the auditor engine to clear this and all other students under this program automatically.

-Jerry

From: Hughes, Melissa
Sent: Friday, December 19, 2014 9:35 AM
To: Mackeldon, Jerry W; Triplehorn, Jeffrey D; Peters, John S; Boyd, Cathy
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Van Sickle, Meta L; Hillenius, Willem Jacob
Subject: RE: BIOL 343 and program changes

Hi folks,

To be clear, I’m happy to make whatever change the folks associated with the Teaching Option major would like. My concern re: time was that I had been working to implement these changes next year. The Provost deadline for such changes was 12/8 - obviously no changes are going to meet that deadline! The Curriculum Committee deadline is 1/16; if the additional Change of Major form can be inserted into the existing packet without having to restart the process, then perhaps we have time (provided we can figure out what the changes should be and find the folks whose signatures are needed in a timely fashion). But I’m not at all familiar with the rules in these matters.

If being past the 12/8 deadline means this proposal is dead in the water until next year, then I apologize for stirring up discussion right before the holidays - we can settle this at our leisure next semester.

If there is still a possibility of getting the proposal through for next year’s catalog, then I’m happy to add the form and run around collecting signatures (assuming folks are willing to sign). As soon as everyone associated with the Teaching Option has agreed on what solution they’d like, I’m happy to proceed.

Thanks,
Melissa

From: Mackeldon, Jerry W
Sent: Friday, December 19, 2014 9:25 AM
To: Triplehorn, Jeffrey D; Peters, John S; Hughes, Melissa; Boyd, Cathy
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Van Sickle, Meta L; Hillenius, Willem Jacob
Subject: RE: BIOL 343 and program changes

Woops...forgot to attach the document from 2005.

-Jerry

From: Mackeldon, Jerry W
Sent: Friday, December 19, 2014 9:23 AM
To: Triplehorn, Jeffrey D; Peters, John S; Hughes, Melissa; Boyd, Cathy
I agree...another way this could be solved could be to change this requirement:
from “Complete at least one course from the following: 310, 322,323,332,333,334,335,336,337,338,343 to
to “Complete at least 4 hours from the following” 310, 322,323,332,333,334,335,336,337,338, or 343 and
343L. (Rephrasing the section descriptor to reflect a numerical value might keep something like this from arising in the future with new biology course proposals.)

Regarding the addition of the FOUR 300 level Biology lab course note, this would constitute another change to the current set of requirements for the EDBL major. When this set of requirements were re-defined in ~2005 (attached and screenshotted below), I programmed the degree audit overlooking the fact that BIOL 304 could be used to fulfill the other above requirements. By omitting that, the FOUR 300 level Biology lab requirement was being audited. However, soon afterward, my oversight was pointed out, and when questioned about how the FOUR 300 level Biology lab would then be accounted for, it was stated that these students were only required to complete THREE 300 level Biology labs. And this is how it has been done since then...only THREE 300 level Biology lab courses.

Note that the “Electives (3-8 hours)” requirement includes Biology courses that are not lab courses (BIOL 314, 350, 406, etc.)
From: Triblehorn, Jeffrey D  
Sent: Friday, December 19, 2014 9:14 AM  
To: Peters, John S; Hughes, Melissa; Boyd, Cathy  
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Mackeldon, Jerry W; Van Sickle, Meta L; Hillenius, Willem Jacob  
Subject: RE: BIOL 343 and program changes

I feel that this should be relatively easy to remedy and still be able to make the deadline. I don’t feel that this should need to go back to the Departmental Curriculum Committee or to the Biology Departmental faculty. The major issue that was considered with this change to Animal Behavior by the Biology Department was separating the lab and lecture and whether the lecture should be offered without the lab. This was resolved and decided upon and the course change proposal was moved forward. This current issue should not impact that decision in the department.

Could Melissa just add the additional Change in Major form for the Biology Teaching Option degree, provide the Program Worksheet with one of the changes that John suggested? As another option, could you put BIOL 343L where BIOL 343 currently is (under the list of labs) and place BIOL 343 (the lecture) in the list below in the section “Select 3-7 credit hours of any 300-level course listed above or from the following”? Wouldn’t this allow the lab to count as a lab, the lecture would also be counted with the lab since the lecture is required for the lab, and still allow the lecture to count by itself as an option for the 3-7 credits if someone does not want to take the lab.

Would this work?

Jeff

Dr. Jeffrey D. Triblehorn  
Assistant Professor  
Department of Biology  
Director, Program in Neuroscience  
College of Charleston  
SCRA 102, Lab 9  
843-953-5848

From: Peters, John S  
Sent: Friday, December 19, 2014 7:26 AM  
To: Hughes, Melissa; Boyd, Cathy  
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Mackeldon, Jerry W; Van Sickle, Meta L; Hillenius, Willem Jacob; Triblehorn, Jeffrey D  
Subject: RE: BIOL 343 and program changes

Okay...well this is why we have the word “permutations” in the dictionary!

I had a look at the requirements for the teaching option, and I don’t think that this change to Animal Behavior will require any significant changes to the requirements. The problem can be solved in a couple of ways. Either is fine with me.

1) Simply remove Animal Behavior (Biol 343) from the list of “Organismal courses” – So this list would include the following courses: 310, 322, 323, 332, 333, 334, 335, 336, 337, 338, 343. And instead place it in the section that says 3-7 credit hours of any 300 level course listed above or from the following list. So it would need to be included in the list here. This is actually a good change, as many students find themselves just needing a 3 hr course to
fulfill their requirements, and given that this is a double major that students have to complete in 7 semesters of course work (the last semester is student teaching); this change really helps out the students.

2) The other option is to keep Animal Behavior in the current “Organismal Course” List, and change the list of course below it to 3-8 credit hours of any 300 level course listed above. Depending on the course route students take they have the following options from this “elective course” list to meet the 19 hr requirement and the 4 lab course departmental requirement...
   a. Take ONE 3 hr course – These would be the students who did not “double dip” on Plant Physiology and DID NOT take Animal Behavior (343). They will have completed the 4 300 level lab requirement already.
   b. Take ONE 4 hr course and ONE 3 hr course. – These would be the students who double dipped on Plant Phys., and did not take Biol 323.
   c. Take ONE 4 hr course – These would be the students who DID NOT double dip on Plant Physiology, and took Biol 323.
   d. Take TWO 4 hr courses – These would be the students who double dipped on Plant Physiology and also took Biol 323.

Regardless of the change that is made, the Notes section on the worksheet should remind students that they must take FOUR 300 level Biology labs.

Am I missing something Meta??

John

John S. Peters, Ph. D.
College of Charleston
Department of Biology
66 George St.
Charleston, SC 29424
Office – 142 SSMB
www.petersj.people.cofc.edu

From: Hughes, Melissa
Sent: Thursday, December 18, 2014 5:07 PM
To: Boyd, Cathy
Cc: Springer, Bonnie C; Ford, Lynne E; Czwazka, Franklin James; Mackeldon, Jerry W; Van Sickle, Meta L; Peters, John S; Hillenius, Willem Jacob; Triblehorn, Jeffrey D
Subject: RE: BIOL 343 and program changes

Yikes!

I'm sorry - this is quite distressing - I conferred with Meta and John months ago, and they didn't see any problems with the change (nor did our departmental curriculum committee or the department as a whole). The program of study form doesn't specify the number of hours necessary in the category in which 343 appears, and there's considerable wiggle-room in the electives (3-7 hours), so I think we all thought that would make up the difference.

But my main concern at this point is timing - I started this process in September, and thought I had all the proverbial ducks in a row, and now it looks like I've nonetheless failed to get this through for next year. (I'm assuming here that adding the Teaching Option form would require a full resubmission and signatures from up the chain - something I don't think is possible before the deadline.) If there is any way to expedite this, please tell me what I need to do.

Thanks,
Melissa
Hi Melissa,

Franklin Czwazka and Jerry Mackeldon from the Registrar’s office have reviewed the curriculum proposals submitted for December which list you as the contact person. They have the comments below.

Thank you,

Cathy

Catherine C. Boyd
Registrar
College of Charleston
Charleston, SC 29424
boydc@cofc.edu
Phone 843.953.1826

**BIOL 343 Course Change and associated curriculum changes:**
A worksheet for the B.S. Biology Teaching Option is necessary or at least further discussion of this is required. The description for this major requirement is referenced as “at least one course from the following” in the catalog, but in reality, this a 4 credit hours major requirement. So, with this change, the “at least one course from the following” requirement description needs to change to “at least 4 credit hours from the following” and then include BIOL 343L. Or, the BIOL 343 needs to be completely removed from this 4 credit hour requirement.

And dependent on the manner in which this section changes or not, the number of required hours in the “3-7 credit hours of any 300-level course listed above or from the following” major section may also need to change since this 3-7 credit hour range is also dependent upon the above 4 credit hours requirement in the current “at least one course from the following” section.

Basically, this entire major is defined and set-up to require at least 34 credit hours of “biology” coursework which includes at least 4 credit hours rather than one course from BIOL 310, 322, 23, 332, 333, 334, 335, 336, 337, 338, 343, and the fact that BIOL 304 may be used to fulfill more than one requirement within the set of major requirements.

Also, here is the [Biology Teaching Option (B.S.) program of study worksheet](#).

Thanks!

Franklin

Franklin J. Czwazka, M.A.
**Catalog Manager** | Office of the Registrar, College of Charleston
66 George Street | Charleston, SC 29424
843.953.5421 (voice) | 843.953.6560 (fax) | czwazka@cofc.edu
Academic Catalogs: [http://catalogs.cofc.edu/](http://catalogs.cofc.edu/)

**Treasurer** | Carolina Association of Collegiate Registrars and Admissions Officers (CACRAO)
RE: question re: status of lab sections

Czwazka, Franklin James

Sent: Thursday, September 04, 2014 10:39 AM
To: Hughes, Melissa; Chapman, Cheryl B
Cc: Boyd, Cathy

This is a grey area because it’s quasi-change/new proposal concerning the lab portion depending on how you look at it. Just submit them both as course changes and it’ll be fine. On the BIOL 343L form please be sure to include the course description you would like to appear in the catalog and the prerequisites needed for BIOL 343L since currently there are no prerequisites set for BIOL 343L.

I’m looking into the inclusion of BIOL 343 in the WGST major and/or minor.

Franklin

---

From: Hughes, Melissa
Sent: Thursday, September 04, 2014 10:24 AM
To: Czwazka, Franklin James; Chapman, Cheryl B
Cc: Boyd, Cathy
Subject: RE: question re: status of lab sections

Hi folks,

Just to clarify - because if I understand Franklin’s email, I must have misunderstood Cheryl's - BIOL 343L doesn’t "exist", and so I do need to propose it as a new course? (I had read Cheryl's email to mean that it exists currently as a 0-credit course and so isn't listed in the catalog (but still exists, and so would require a 'change of course' form, rather than a 'new course' form). I'm sorry if I'm being dense; I just want to try to resolve any problems at the front end of the process, rather than later, if possible.

My main concern about proposing it as a new course is the 'repeat' student criteria that the Senate uses - that is, we're told not to propose a new course unless a student who took the old course would be allowed to take the new course for credit. That clearly shouldn't occur here, as the courses will be very nearly the same (that is, a student who has already taken BIOL 343 with the lab should not be able to take the "new" 1-credit 343L class as a new class). Also, if 343L is already in the system as a number, won't that cause problems with assigning that number to a new class?

I knew about Neuroscience but not about Physics - I'll be in touch with those folks. The course had actually also been approved as an elective for WGS as well, although I see that's not listed in the current catalog - I'll check with them as well. As for Biology - currently the class can be used to meet both 300-level elective credit hour requirements, and lab requirements. I think the department will want both BIOL 343 and 343L to count towards the elective credits, and 343L to count towards the lab requirement; once I get the forms in order, they'll run through our departmental curriculum committee to confirm that.

Thanks for your help,
Melissa

---

From: Czwazka, Franklin James
Sent: Thursday, September 04, 2014 10:15 AM

https://owa.cofo.edu/owa/?ae=Item&ct=IPM.Note&id=RgAAAAC2RW4b08SaoXKg1MFTnSBwD6DgMO4MJTFIxLDL%2bdYuKAABj%26IAAD6DgMO4M...
Hi Melissa,

Cheryl is right. Course forms will be needed for both BIOL 343 (a course change) and BIOL 343L (technically I guess it’s a new course since BIOL 343L is really a placeholder for the lab component). As a result of this change, BIOL 343L will be listed separately in the catalog with its own course description starting with the upcoming 2015-16 catalog.

Acknowledgements of the course proposals will be needed for the Neuroscience minor and from the Physics Department since they currently use BIOL 343. The Physics Department uses this course in their Computational Neuroscience concentration in both the B.A. and B.S. Physics majors.

What about your own majors? Will the course still be used, without the lab, as it currently is to meet major requirements or will the lab be required for students to have both BIOL 343 and 343L to meet major requirements?

Franklin

Franklin J. Czwazka, M.A. | Catalog Manager
Registrar’s Office, College of Charleston
Charleston, SC 29424
(p) 843.953.5421 | (f) 843.953.6560 | (e) czwazka@cofc.edu

From: Chapman, Cheryl B
Sent: Thursday, September 04, 2014 9:17 AM
To: Hughes, Melissa
Cc: Czwazka, Franklin James; Boyd, Cathy
Subject: RE: question re: status of lab sections

Melissa,
BIOL 343L is currently a “0” credit lab, so it not listed in the catalog. Yes, this change is possible. Bottom line... you want it set up like BIOL 305 and 305L. You would need to submit Course Change forms. I am copying Franklin Czwazka who is following up with research as to how this change would affect major. He will let you know exactly what forms he will need and how they should be submitted.

Best,
Cheryl Chapman

Cheryl Chapman
Associate Registrar for Registration & Scheduling
College of Charleston
Charleston, SC 29424
Phone 843-953-5756
Fax 843-953-6560

https://owa.cofc.edu/owa/?ae=Item&ti=IPM.Note&id=RgAAAAAc2RW4hbo8soXKglMFTnSBwD6DjgMO4MFT1xLDL%2bdYuKAABJy%2f6IAAD6DjgMO4M... 2/4
From: Boyd, Cathy  
Sent: Wednesday, September 03, 2014 4:53 PM  
To: Hughes, Melissa  
Cc: Chapman, Cheryl B  
Subject: RE: question re: status of lab sections

Melissa,

I have copied the Associate Registrar for Registration and Scheduling, Cheryl Chapman, so she can respond to your question.

Best,

Cathy

Catherine C. Boyd
Registrar
College of Charleston
Charleston, SC 29424
Phone 843.953.1826

---

From: Hughes, Melissa  
Sent: Wednesday, September 03, 2014 4:22 PM  
To: Boyd, Cathy  
Subject: question re: status of lab sections

Hi Cathy,

I teach a Biology course that currently has a required lab component; I'd like to make the lab optional (a pre- or co-req of the lecture component), and am working with the faculty senate curriculum committee to accomplish this. But I've run into a bit of a procedural question that I hope you can help clarify.

The course is BIOL 343. Like many BIOL courses, it is currently listed in the catalog as a 4-credit course, with 3 contact hours in lecture and 3 contact hours in lab. Thus, there is no separate catalog listing for the lab - the lab component is included in the lecture description. However, in Banner there are different sections: BIOL 343 for the lecture, and BIOL 343L for the lab sections; these have different CRN numbers, and students have to register for them separately (I don't know what the student screens look like, but they can't register for either the lecture or lab by themselves, so I'd guess they are considered co-requisites). For a variety of reasons, I'd like to separate these components, so students can take just the lecture if they prefer; the lab section (BIOL 343L) would have the lecture as a pre- or co-req.

So here is the question. To accomplish this change, I know I need to request a 'change of existing course', changing BIOL 343 to a 3-credit class without a lab section. But I don't know what to do about BIOL 343L - it isn't listed in the catalog, so does that mean I need to propose it as a "new" course? On the other hand, it's not really new, and has been offered for years under its own CRN. I guess the question is: does BIOL 343L already exist, or not?

Any guidance on how I should proceed would be most helpful.

Thanks,
Melissa

--

Melissa Hughes  
Professor  
Department of Biology  
College of Charleston  
66 George St.  
Charleston, SC 29424 USA

hughesm@cofc.edu

843.953.6557  
843.953.5453 (fax)