

For Academic Affairs and Research Use Only	
Proposal Number	
CIP Code:	
Degree Code:	

## NEW OR MODIFIED COURSE PROPOSAL FORM

Undergraduate Curriculum Council

Graduate Council

New Course,  Experimental Course (1-time offering), or  Modified Course (Check one box)

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

Jianfeng Xu 1/12/2023  
**Department Curriculum Committee Chair**

	ENTER DATE...
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**COPE Chair (if applicable)**

	ENTER DATE...
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**Department Chair**

Fabricio Medina-Bolivar 1/12/2023  
**Head of Unit (if applicable)**

John Hershberger 2/23/2023  
**College Curriculum Committee Chair**

	ENTER DATE...
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**Undergraduate Curriculum Council Chair**

Mary Elizabeth Spence 2/16/2023  
**Office of Accreditation and Assessment (new courses only)**

	ENTER DATE...
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**Graduate Curriculum Committee Chair**

Jennifer L. Bouldin 3/1/2023  
**College Dean**

<div style="display: flex; justify-content: space-between;"> <span style="font-size: 1.5em;">_Len Frey_</span> <span style="font-size: 1.5em;">4/5/23</span> </div>	ENTER DATE...
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**Vice Chancellor for Academic Affairs**

	ENTER DATE...
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**General Education Committee Chair (if applicable)**

**1. Contact Person (Name, Email Address, Phone Number)**  
 Travis Marsico, tmarsico@astate.edu, 870-253-1410

2. Proposed starting term and Bulletin year for new course or modification to take effect

The proposed starting semester is Spring 2024

**Instructions:**

Please complete all sections unless otherwise noted. For course modifications, sections with a "Modification requested?" prompt need not be completed if the answer is "No."

3.

	Current ( <b>Course Modifications Only</b> )	Proposed ( <b>New or Modified</b> ) <i>(Indicate "N/A" if no modification)</i>
<b>Prefix</b>		MBS
<b>Number*</b>		6363
<b>Title</b> (include a short title that's 30 characters or fewer)		Interdisciplinary Projects
<b>Description**</b>		At the intersection of at least three distinct disciplines, students will work in teams to develop and implement an interdisciplinary research. Projects can include synthesis articles based on literature reviews or generation of new knowledge including field, laboratory, and computational approaches.

\* Confirm with the Registrar's Office that number chosen has not been used before and is available for use. For variable credit courses, indicate variable range. *Proposed number for experimental course is 9.*

\*\*Forty words or fewer (excepting prerequisites and other restrictions) as it should appear in the Bulletin.

4. Proposed prerequisites and major restrictions [**Modification requested? No**]

(Indicate all prerequisites. If this course is restricted to a specific major, which major. If a student does not have the prerequisites or does not have the appropriate major, the student will not be allowed to register).

a. **NO** Are there any prerequisites?

a. If yes, which ones?

**NA**

b. Why or why not?

**As a graduate level course, it will not be available to undergraduates, and only graduate students in BIO, CS, ESCI, and MBS programs will be given registration access to the course. These students will already have completed sufficient graduate courses making prerequisites unnecessary.**

b. **YES** Is this course restricted to a specific major?

a. If yes, which major?

**This course will be offered to MS, MA, and PhD students in BIO, CS, ESCI, and MBS programs.**

5. Proposed course frequency [**Modification requested? No**]

(e.g. Fall, Spring, Summer; if irregularly offered, please indicate, "irregular.") *Not applicable to Graduate courses.*

NA

**6. Proposed course type** [Modification requested? No]

Will this course be lecture only, lab only, lecture and lab, activity (e.g., physical education), dissertation/thesis, capstone, independent study, internship/practicum, seminar, special topics, or studio? Please choose one.

**Lecture/discussion with a focus on production of a detailed project proposal or publication-ready co-authored manuscript.**

**7. Proposed grade type** [Modification requested? No]

What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental, or other [please elaborate]) This will be a standard letter, credit course

**8. NO** Is this course dual-listed (undergraduate/graduate)?

**9. YES** Is this course cross-listed?

*(If it is, all course entries must be identical including course descriptions. Submit appropriate documentation for requested changes. It is important to check the course description of an existing course when adding a new cross-listed course.)*

a. – If yes, please list the prefix and course number of the cross-listed course.

ESCI 6363

b. – Can the cross-listed course be used to satisfy the prerequisite or degree requirements this course satisfies?

YES

**10. NO** Is this course in support of a new program?

a. If yes, what program?

**11. NO** Will this course be a one-to-one equivalent to a deleted course or previous version of this course (please check with the Registrar if unsure)?

a. If yes, which course?

Enter text...

## Course Details

**12. Proposed outline** [Modification requested? Yes/No]

(The course outline should be topical by weeks and should be sufficient in detail to allow for judgment of the content of the course.)

**Week 1** Introductions of students, student research interests, and importance of teamwork.

**Week 2** Forming effective teams: clear communication.

**Week 3** Maintaining productive teams: regular re-evaluation of roles and commitments.

**Week 4** Finalizing teams for class projects.

**Week 5** Presentations of initial ideas/plans.

**Week 6** Outcomes of initial literature searches; peer and instructor evaluation of interdisciplinarity of proposal drafts.

- Week 7** Writing effective syntheses: literature review and identification of data gaps.
- Week 8** Development and discussion of outlines.
- Week 9** What is the hook? Peer and instructor evaluation of how the proposed products contribute to interdisciplinary advancement.
- Week 10** Importance of revisions to ideas and text.
- Week 11** Project progression evaluation and check-ins. Regular class meeting for group discussion of progress, complications, or problems. Weekly group project deadlines set for progress.
- Week 12** Project progression evaluation and check-ins. Regular class meeting for group discussion of progress, complications, or problems. Weekly group project deadlines set for progress.
- Week 13** Project progression evaluation and check-ins. Regular class meeting for group discussion of progress, complications, or problems. Weekly group project deadlines set for progress.
- Week 14** Project progression evaluation and check-ins. Regular class meeting for group discussion of progress, complications, or problems. Weekly group project deadlines set for progress.
- Week 15** Final presentations and submission of written products to instructor. Response from instructor may lead to post-semester edits and submission of a grant proposal or peer-reviewed publication.

**13. Proposed special features** [Modification requested? Yes/No]  
(e.g. labs, exhibits, site visitations, etc.)

**This course is a lecture and discussion course with an emphasis on building and maintaining effective teams and production of written and oral products.**

**14. Department staffing and classroom/lab resources**

**Department of Biological Sciences**

- a. Will this require additional faculty, supplies, etc.?  
**NO**

**15. NO** Does this course require course fees?

*If yes: please attach the New Program Tuition and Fees form, which is available from the UCC website.*

## **Justification**

**Modification Justification (Course Modifications Only)**

**16. Justification for Modification(s)**

Enter text...

**New Course Justification (New Courses Only)**

**17. Justification for course. Must include:**

- a. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain)

**Molecular Biosciences are inherently interdisciplinary, but the current curriculum does not include explicit course-based education into the project-based teamwork associated with building and maintaining productive and efficient interdisciplinary teams. In this first iteration of a course specifically addressing interdisciplinary teamwork and production, disease ecology, biological invasions, and advanced computation will be integrated in student proposals or publication-ready manuscript preparation.**

b. How does the course fit with the mission of the department? If course is mandated by an accrediting or certifying agency, include the directive.

**This is an important addition to a thin selection of coursework that is flexible in its implementation but core to the interdisciplinary nature of molecular biosciences.**

c. Student population served.

**This course is serving graduate students associated with BIO, CS, ESCI, and MBS programs. This course is meant to enhance interdisciplinarity and expose students to the underutilized research potential and overlap among fields.**

d. Rationale for the level of the course (lower, upper, or graduate).

**This course must be a graduate level course because, among other groups, it is serving PhD students.**

## Assessment

### Assessment Plan Modifications (Course Modifications Only)

18. **Yes / No** Do the proposed modifications result in a change to the assessment plan?

*If yes, please complete the Assessment section of the proposal*

### Relationship with Current Program-Level Assessment Process (Course modifications skip this section unless the answer to #18 is "Yes")

19. What is/are the intended program-level learning outcome/s for students enrolled in this course? Where will this course fit into an already existing program assessment process?

The Molecular Biosciences Program has 3 learning outcomes:

- 1) Students will be able to demonstrate competency in the field of advanced cellular and molecular biology through course work, experimentation in the laboratory and ability to think critically about the biological processes as well their applications in their own research.
- 2) Students will complete a well-organized scientific study related to molecular biosciences. While accomplishing this, students will be able to think critically, develop hypotheses, review the literature, design and perform experiments, analyze and interpret data (results), write and defend a thesis/dissertation proposal.
- 3) Students will develop expertise in oral and written science communication skills.

The proposed course advances all three of the learning outcomes by teaching specific skills for effective interdisciplinary collaboration.

20. Considering the indicated program-level learning outcome/s (from question #19), please fill out the following table to show how and where this course fits into the program's continuous improvement assessment process.

*For further assistance, please see the 'Expanded Instructions' document available on the UCC - Forms website for guidance, or contact the Office of Assessment at 870-972-2989.*

<b>Program-Level Outcome 1 (from question #19)</b>	Students will be able to demonstrate competency in the field of advanced cellular and molecular biology through course work, experimentation in the laboratory and ability to think critically about the biological processes as well their applications in their own research.
Assessment Measure	Written products presented to the class orally on an integrated interdisciplinary topic.
Assessment Timetable	Written product outcomes and results of student presentations will be reported to the MBS program director upon request as needed for program-level assessment.
Who is responsible for assessing and reporting on the results?	The course instructors are responsible for reporting results.

<b>Program-Level Outcome 2 (from question #19)</b>	Students will complete a well-organized scientific study related to molecular biosciences. While accomplishing this, students will be able to think critically, develop hypotheses, review the literature, design and perform experiments, analyze and interpret data (results), write and defend a thesis/dissertation proposal.
Assessment Measure	Class discussions and effective completion of class assignments.
Assessment Timetable	These assessments will be completed every semester the course is offered. Results will be reported to the MBS program director upon request as needed for program-level assessment.
Who is responsible for assessing and reporting on the results?	The course instructors are responsible for reporting results.

<b>Program-Level Outcome 3 (from question #19)</b>	Students will develop expertise in oral and written science communication skills.
Assessment Measure	Written products presented to the class orally on an integrated interdisciplinary topic.
Assessment Timetable	Written product outcomes and results of student presentations will be reported to the MBS program director upon request as needed for program-level assessment. If proposals are funded or manuscripts are published as a result of the class, these will be included as indirect measures of peer-reviewed successes.
Who is responsible for assessing and reporting on the results?	The course instructors are responsible for reporting results.

*(Repeat if this new course will support additional program-level outcomes)*

### **Course-Level Outcomes**

**21.** What are the course-level outcomes for students enrolled in this course and the associated assessment measures?

<b>Outcome 1</b>	Develop and nurture effective interdisciplinary teams.
Which learning activities are responsible for this outcome?	The product-oriented focus on proposals for funding or peer-reviewed publications will be used to determine if teams were successful and where limitations or difficulties present.
Assessment Measure	Submission rate of groups and self-reflection survey conducted by all students.

*(Repeat if needed for additional outcomes)*

## Bulletin Changes

### Instructions

Please visit <http://www.astate.edu/a/registrar/students/bulletins/index.dot> and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Please include a before (with changed areas highlighted) and after of all affected sections.

\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.

### MBS 6363 – Interdisciplinary Projects

At the intersection of at least three distinct disciplines, students will work in teams to develop and implement an interdisciplinary research. Projects can include synthesis articles based on literature reviews or generation of new knowledge including field, laboratory, and computational approaches.