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

**New or Modified Course Proposal Form**

**[ ] Undergraduate Curriculum Council**

**[X ] Graduate Council**

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| **[X]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.

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| David F Gilmore 8/27/2020**Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**COPE Chair (if applicable)** |
| Stephen J. Mullin 8/28/2020**Department Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Head of Unit (if applicable)**   |
| John Hershberger 9/2/2020**College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Undergraduate Curriculum Council Chair** |
| Mary Elizabeth Spence 9/4/2020**Office of Assessment (new courses only)** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Graduate Curriculum Committee Chair** |
| Lynn Boyd 9/4/2020**College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Vice Chancellor for Academic Affairs** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**General Education Committee Chair (if applicable)**   |  |

1. **Contact Person (Name, Email Address, Phone Number)**

Dr. Lorin Neuman-Lee lneumanlee@astate.edu

870-972-3111

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

2020-2021, Spring

**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.”*

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|  | **Current (Course Modifications Only)** | **Proposed (New or Modified)** *(Indicate “N/A” if no modification)* |
| **Prefix** |  | **BIO** |
| **Number\*** |  | **6043** |
| **Title** |  | The Anatomy of a Grant |
| **Description\*\*** |  | Students will prepare a large grant for a government or non-profit agency. Students will write the grant, compile a budget, and complete documentation required for funding. Students will work with various campus offices and successful grantees to navigate this process. |

 ***\**** (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 as it should appear in the Bulletin.

1. **Proposed prerequisites and major restrictions** **[Modification requested? Yes/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).

1. YES Are there any prerequisites?
	1. If yes, which ones?

BIO 6003 or instructor permission

* 1. Why or why not?

This course requires graduate students to have already completed preliminary explorations into their topic and have basic writing skills accomplished. Students in BIO 6003 have already completed objective statements, literature reviews, and basic methodological research

1. NO Is this course restricted to a specific major?
	1. If yes, which major? Enter text...
2. **Proposed course frequency [Modification requested? Yes/No]**

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

Enter text...

1. **Proposed course type [Modification requested? Yes/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 only

1. **Proposed grade type [Modification requested? Yes/No]**

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

Standard letter

1. NO Is this course dual-listed (undergraduate/graduate)?
2. NO 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.

 Enter text...

 **b.** – **Yes / No** Can the cross-listed course be used to satisfy the prerequisite or degree requirements this course satisfies?

 Enter text...

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

a. If yes, what program?

 Enter text...

1. 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**

1. **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: Selecting a Granting Agency

Week 2: Reading an RFP and Gathering Documentation

Week 3: Outline of Project Proposal

Week 4: Project Proposal Best Practices

Week 5: The Budget

Week 6: Sponsored Programs and Accounting

Week 7: What does a successful grant look like?

Week 8: Biosketches, Data Management, Facilities

Week 9: Rough Draft of Proposal

Week 10: Reviews of Rough Draft

Week 11: Editing and Understanding Reviews

Week 12: Final Proposal

Week 13: Mock Panel Discussion

Week 14: Review of Panel Comments

Week 15: Wrap-up

1. **Proposed special features** **[Modification requested? Yes/No]**

(e.g. labs, exhibits, site visitations, etc.)

No

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

Asst. prof. Dr. Neuman-Lee will teach as part her teaching rotation

1. Will this require additional faculty, supplies, etc.?

 NO

1. 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)**

1. Justification for Modification(s)

Enter text...

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

1. Justification for course. Must include:

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

 One key skill for a successful career in government, academia, private sectors, and education is the ability to write fundable grants. Government agencies, such as the National Science Foundation, National Institutes of Health, and the United States Department of Agriculture, offer large highly competitive grants that are often difficult to navigate for novices. Additionally, large competitive grants from private foundations are often available, but can have different rules and regulations and are often challenging to find. Writing successful grants requires partnerships between campus organizations, such as the budgeting office, human resources, and sponsored programs and accounting. Navigating the network of offices and paperwork can be overwhelming without a working knowledge of what is required. This course will serve as a way for students to get exposure to the process and learn the network of individuals who help make this process successful. Students will write their own targeted grant, compile all relevant documentation, and complete a full budget. Students will provide feedback on each other’s grants and the entire process will culminate in a mock panel where we will discuss student grants. Students will have a completed draft of a grant with feedback for them to use as a template when they go to write their own grants.

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.

 The stated career path for this major is as follows: “The MS Biology Program prepares students for a variety of careers in government, academia and research.” This course directly helps students prepare for careers in all three fields.

c. Student population served.

Graduate students in the EVS, MBS, BIO, and Agriculture fields would benefit from this course

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

It is most suitable for graduate students who are engaged in literature reviews and who have developed analytical skills. This course will require students to have a developed project and have established at least a basic working knowledge of the primary literature of their project.

**Assessment**

**Assessment Plan Modifications (Course Modifications Only)**

1. **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”)**

1. 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?
* Biology--Students will be able to understand that science is a process as well as a body of knowledge
* Biology--Students will be able to acquire the skills and knowledge needed for employment or advanced graduate study in discipline related areas.
* Environmental Sciences-- -Students will complete a well organized scientific study related to environmental sciences.
* Environmental Sciences-- Students will develop expertise in oral and written communication skills.
* Environmental Sciences-- Students will be able to demonstrate competency in the multi-disciplinary fields of environmental science through course work and field/laboratory studies.
* Molecular Biosciences-- Students will complete a well-organized scientific study related to molecular biosciences.
* Molecular Biosciences-- Students will develop expertise in oral and written communication skills.
* Molecular Biosciences-- 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.
1. 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.*

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| **Biology Program-Level Outcome 1 (from question #23)** | * Students will be able to understand that science is a process as well as a body of knowledge
 |
| Assessment Measure | Masters of Science: Successful defense of thesis/dissertationMasters of Arts: Successful completion of practicum IIMaster of Science Education: Successful completion of programPhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Biology Program-Level Outcome 2 (from question #23)** | Students will be able to acquire the skills and knowledge needed for employment or advanced graduate study in discipline related areas. |
| Assessment Measure | Masters of Science: Successful defense of thesis/dissertationMasters of Arts: Successful completion of practicum IIMaster of Science Education: Successful completion of programPhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Environmental Sciences Program-Level Outcome 1 (from question #23)** | Students will complete a well organized scientific study related to environmental sciences. |
| Assessment Measure | PhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Environmental Sciences Program-Level Outcome 2 (from question #23)** | Students will develop expertise in oral and written communication skills. |
| Assessment Measure | PhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Environmental Sciences Program-Level Outcome 3 (from question #23)** | Students will be able to demonstrate competency in the multi-disciplinary fields of environmental science through course work and field/laboratory studies. |
| Assessment Measure | PhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Molecular Biosciences Program-Level Outcome 1 (from question #23)** | Students will complete a well-organized scientific study related to molecular biosciences. |
| Assessment Measure | PhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Molecular Biosciences Program-Level Outcome 2 (from question #23)** | Students will develop expertise in oral and written communication skills. |
| Assessment Measure | PhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

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| **Molecular Biosciences Program-Level Outcome 3 (from question #23)** | 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 | PhD: Successful defense of dissertation |
| Assessment Timetable | Final Semester of degree |
| Who is responsible for assessing and reporting on the results? | The student’s committee and department chair are responsible for assessing this outcome. |

 **Course-Level Outcomes**

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

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| **All outcomes** | * Identifies key offices, personnel, and documentation responsible for the completion of a successful grant
 |
| Which learning activities are responsible for this outcome? | Final grant product, specifically the inclusion of a high-quality budget and supplementary documentation |
| Assessment Measure  | Complete grant that passes review by a mock panel |

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| **All outcomes** | * Generate a project description that is clear and concise for target audience
 |
| Which learning activities are responsible for this outcome? | Final grant product, specifically the inclusion of a high-quality project description |
| Assessment Measure  | Complete grant that passes review by a mock panel |

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| **All outcomes** | * Summarize the steps and processes required for composing a fundable grant
 |
| Which learning activities are responsible for this outcome? | Final grant product |
| Assessment Measure  | Complete grant that passes review by a mock panel |

**Bulletin Changes**

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| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](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.**  |

BIO 5613. Conservation Biology A study of global and local biological resources, including the diversity of life, the value of biodiversity, the importance of diversity to humans and human cultures, and interdisciplinary strategies to conserve biological resources. Lecture three hours per week. Prerequisites: BIO 3023 or permission of professor.

BIO 5623. Environmental Microbiology A study of the physiology and diversity of microorganisms and their role in cycling of nutrients and mineralization of pollutants in the world. Prerequisites: CHEM 1023 and BIO 2103, or 4014, or 4133.

BIO 5633. Environmental Toxicology: Mechanisms and Impacts Understanding the basic principles behind the study of impacts and the mechanisms of physiological disturbances associated with environmental toxicant exposure to natural systems. Prerequisites: BIO 4131, BIO 4133 and CHEM 4232 or permission of professor. Lecture three hours per week.

BIO 5684. Biological Data Analyses Use of statistical tests and models (regression, ANOVA, generalized linear models, and mixed-effect models, PCA) to analyze ecological/biological data. Applications using a free statistical program. Prerequisite: Applied Statistics or equivalent.

BIO 5704. Plant Systematics A study of the systematics, nomenclature, morphology, and identification terminology for vascular plants with an emphasis on dichotomous key-based identification of flowering plants of Arkansas. BIO 5714. Dendrology A study of the systematics, nomenclature, morphology, phenology, geographic range, and natural history of woody plants with an emphasis on field recognition throughout the year.

BIO 5813. Curation of Collections Current, appropriate museum-quality specimen curation for a range of taxa including the collection and preservation of specimens of vascular plants, fungi, mussels, fish, reptiles and amphibians, and mammals. Dual listed as BIO 4813. Prerequisites: BIO 1301, BIO 1303, BIO 1501 and BIO 1503 or with the instructor approval.

BIO 5823. Natural History Collections Research Design Evaluation and development of research questions using current, peer-reviewed literature as a basis for discussion supported by natural history specimens and data. Research topics include taxonomy, biogeography, ecology, and global change biology. Activities demonstrate hypothesis testing in biodiversity science. Dual listed as BIO 4823. Prerequisite: BIO 5813 or instructor approval. BIO 6001. Biological Seminar Required of all graduate students.

BIO 6003. Scientific Methods and Research Design A focus on the understanding and development of the scientific method as it pertains to research. Required of the graduate life sciences major, including students studying within the Biology, Botany, Wildlife Management and Zoology emphasis.

BIO 6013. Evolutionary Biology A summary of current theories concerned with evolution of biological organisms. An elective course particularly directed to the needs of biological science majors including students of Biology, Botany, Zoology, and Wildlife Management. (Fall of even years)

BIO 6043. The Anatomy of a Grant Students will prepare a large grant for a federal or non-profit agency. Students will write the grant, compile a budget, and complete documentation required for funding. Students will work with various campus offices and successful grantees to navigate this process.

BIO 6113. Advanced Cell Biology Study of recent advances in cell biology through critical analysis of current literature. Focusing on eukaryotic cell structure and function, topics may include, but not be restricted to, cellular structures and organelles; cell cycling; signal transduction; gene regulation; and intracellular trafficking. Perquisites: A course in cell biology or permission of the professor.

BIO 6123. Specialized Biochemistry An advanced study of biochemical pathways leading to specialized biologically active metabolites. Emphasis will be on specialized pathways in plants and their counterparts in animals, and microorganisms.

BIO 6143. Introduction to Biotechnology & Research Design Study of molecular biological techniques and experimental designs through oral and written review of scientific literature. Career preparation by construction of curriculum vitae and work portfolios. Prerequisities: Students must be graduate students in a biological field of science.