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

**Course Revision Proposal Form**

**[ ] Undergraduate Curriculum Council**

**[X] Graduate Council**

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

Email completed proposals to [curriculum@astate.edu](mailto:curriculum@astate.edu) for inclusion in curriculum committee agenda.

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| David F. Gilmore 2/21/2019 **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| Travis D. Marsico 2/22/2019 **Department Chair:** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Head of Unit (If applicable)** |
| David F. Gilmore 2/22/2019 **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| Anne A. Grippo 2/22/2019 **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **General Education Committee Chair (If applicable)** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |

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

Virginie Rolland, [vrolland@astate.edu](mailto:vrolland@astate.edu), 870-972-3194

2. Proposed Starting Term and Bulletin Year for Change to Take Effect

Spring 2020

3. Current Course Prefix and Number

BIO 5684

3.1 – **[YES]** Request for Course Prefix and Number change

If yes, include new course Prefix and Number below. *(Confirm that number chosen has not been used before. For variable credit courses, indicate variable range. Proposed number for experimental course is 9. )*

BIO 6684

3.2 – YES If yes, has it been confirmed that this course number is available for use?

*If no: Contact Registrar’s Office for assistance.*

4. Current Course Title

Biological Data Analyses

4.1 – **[NO]** Request for Course Title Change

If yes, include new Course Title Below.

Enter text...

1. If title is more than 30 characters (including spaces), provide short title to be used on transcripts. *Title cannot have any symbols (e.g. slash, colon, semi-colon, apostrophe, dash, and parenthesis).*

Enter text...

1. Please indicate if this course will have variable titles (e.g. independent study, thesis, special topics).

Enter text...

5. – **[NO ]** Request for Course Description Change.

If yes, please include brief course description (40 words or fewer) as it should appear in the bulletin.

Enter text...

6. – [NO ] Request for prerequisites and major restrictions change.

*(If yes, 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 / No** Are there any prerequisites?
   1. If yes, which ones?

Enter text...

* 1. Why or why not?

Enter text...

1. **Yes / No** Is this course restricted to a specific major?
   1. If yes, which major? Enter text...

7. – [NO ] Request for Course Frequency Change(e.g. Fall, Spring, Summer). *Not applicable to Graduate courses.*

a. If yes, please indicate current and new frequency:

Enter text...

8. – [NO ] Request for Class Mode Change

*If yes, indicate if this course will be lecture only, lab only, lecture and lab, activity, dissertation, experiential learning, independent study, internship, performance, practicum, recitation, seminar, special problems, special topics, studio, student exchange, occupational learning credit, or course for fee purpose only (e.g. an exam)? Please* *indicate the current and choose one.*

Enter text...

9. – [NO ] Request for grade type change

*If yes, what is the current and the new grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental, or other [please elaborate])*

Enter text...

10. NO Is this course dual listed (undergraduate/graduate)?

a. If yes, indicate course prefix, number and title of dual listed course.

Enter text...

11. 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.)*

**11.1** – If yes, please list the prefix and course number of cross listed course.

Enter text...

**11.2** – **Yes / No** Are these courses offered for equivalent credit?

Please explain. Enter text...

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

a. If yes, what program?

Enter text...

13. NO Does this course replace a course being deleted?

a. If yes, what course?

Enter text...

14. NO Will this course be equivalent to a deleted course or the previous version of the course?

a. If yes, which course?

Enter text...

15. NO Does this course affect another program?

If yes, provide confirmation of acceptance/approval of changes from the Dean, Department Head, and/or Program Director whose area this affects.

Enter text...

16. Does this course require course fees?

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

No

**Revision Details**

17. Please outline the proposed revisions to the course.

*Include information as to any changes to course outline, special features, required resources, or in academic rationale and goals for the course.*

The course will be increased one level

18. Please provide justification to the proposed changes to the course.

A new course at the 5000-level course is being proposed (BIO5023 Biometry) because BIO5684 requires prior exposure to statistics. To reflect the difference in levels between the new proposed course BIO5023 (introductory) and the current course BIO5684 (advanced), changing Biological Data Analyses to 6000 level is appropriate.

19. NO Do these revisions result in a change to the assessment plan?

*\*If yes: Please complete the Assessment section of the proposal on the next page.*

*\*If no: Skip to Bulletin Changes section of the proposal.*

***\*See question 19 before completing the Assessment portion of this proposal.***

**Assessment**

**Relationship with Current Program-Level Assessment Process**

20. 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?

Enter text...

21. Considering the indicated program-level learning outcome/s (from question #23), 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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| **Program-Level Outcome 1 (from question #23)** | Type outcome here. What do you want students to think, know, or do when they have completed the course? |
| Assessment Measure | Please include direct and indirect assessment measure for outcome. |
| Assessment  Timetable | What semesters, and how often, is the outcome assessed? |
| Who is responsible for assessing and reporting on the results? | Who (person, position title, or internal committee) is responsible for assessing, evaluating, and analyzing results, and developing action plans? |

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

**Course-Level Outcomes**

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

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| **Outcome 1** | Type outcome here. What do you want students to think, know, or do when they have completed the course? |
| Which learning activities are responsible for this outcome? | List learning activities. |
| Assessment Measure | What will be your assessment measure for this outcome? |

*(Repeat if needed for additional outcomes)*

**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. Follow the following guidelines for indicating necessary changes.**  **\*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.**  - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)  - New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font).  - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)  *You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.*  *Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

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Statistics (select two of the following courses or course/lab combinations):

AGRI 6213, Experimental Designs

AGRI 5233, Experimental Agricultural Statistics

BIO ~~5683~~ 6684, Biological Data Analyses

BIO 6603, Environmental Systems Analysis AND BIO 6601, Environmental Systems Analysis Lab

STAT 6613, Nonparametric Statistics

STAT 6623, Statistical Methods with SAS Programming

STAT 6643, Multivariate Analysis

STAT 6653, Data Analysis I: Regression Analysis

STAT 6663, Data Analysis II: Analysis of Variance (ANOVA)

STAT 6673, Design of Experiments

STAT 6833, Biostatistics

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**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’s permission.

**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 approval from instructor.

**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.

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**BIO 6603. Environmental Systems Analysis** Environmental problem-solving utilizing systems modeling and applied statistical analysis. Use of the microcomputer as an analytical tool will be emphasized. Prerequisites: one semester of calculus, one semester of statistics, BIO 4633,5633, or permission of professor. Lecture three hours per week.

**BIO 6621. Laboratory for Case Studies in Ecosystem Management** Field and laboratory experiences in evaluation of ecological, economic and sociological aspects of management of water, soil, and air resources. Course will emphasize data collection, analysis and reporting. Prerequisites: BIO 3023 or 4373,5633 and 6603 or permission of professor. Laboratory three hours per week. Special course fees may apply.

**BIO 6633. Population Community Ecology** An overview of principles, applications, and modeling of population and community ecology.

**BIO 6623. Case Studies in Ecosystem Management** Evaluation of ecological, economic and sociological aspects of management of water, soil and air resources. Content will vary based on current topics of importance in the field of environmental science. Prerequisites: BIO 3023 or 4373 , 5633 and 6603 or permission of professor. Lecture three hours per week.

**BIO 6653. Aquatic Ecotoxicology** A study of the effects of contaminants in water, their accumulation in the biota, and the functional response of populations to specific contaminants. Lecture three hours per week. Prerequisites: BIO 5603, or BIO 6301, or permission of professor.

BIO 6684. 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 680V. Independent Study BIO 7161**. Responsible Conduct in Research A one credit hour course providing training on ethical behavior in sciences.