Code # SM29 (2015)

**Reconfiguration of Existing Degree Program Proposal Form**

[x]  **Undergraduate Curriculum Council** - Print 1 copy for signatures and save 1 electronic copy.

[ ]  **Graduate Council** - Print 1 copy for signatures and send 1 electronic copy to pheath@astate.edu

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**COPE Chair (if applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Department Chair:**  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**General Education Committee Chair (If applicable)**   |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Undergraduate Curriculum Council Chair** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Graduate Curriculum Committee Chair** |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Vice Chancellor for Academic Affairs** |

1. **Proposed Program Title**

BS in Environmental Science

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

Dr. Thomas Risch, trisch@astate.edu, 972-3082

1. **Proposed Starting Date**

8/16/2016

1. **Is there differential tuition requested?** *If yes, please fill out the New Program/Tuition and Fees Change Form.*

no

**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.* |

 ***\*For new programs, please insert copy of all sections where this is referenced.\****

**~~Major in Wildlife Ecology and Management~~**

~~Bachelor of Science~~

~~A complete 8-semester degree plan is available at http://registrar.astate.edu/.~~

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| **~~University Requirements:~~**  |
| ~~See University General Requirements for Baccalaureate degrees (p. 41)~~  |
| ~~First Year Making Connections Course:~~  | ~~Sem. Hrs.~~  |
| ~~BIO 1013, Making Connections - Biology~~  | ~~3~~  |
| ~~General Education Requirements:~~  | ~~Sem. Hrs.~~  |
| ~~See General Education Curriculum for Baccalaureate degrees (p. 83)~~ ~~Students with this major must take the following:~~ ~~MATH 1054, Precalculus Mathematics or MATH course that requires MATH 1023 as a prerequisite~~ ~~CHEM 1013 AND 1011, General Chemistry I and Laboratory~~ ~~BIO 2013 AND 2011, Biology of the Cell and Laboratory~~ ~~COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)~~  | ~~36~~  |
| ~~Language Requirement:~~  | ~~Sem. Hrs.~~  |
| ~~A student must complete the foreign language requirements before being considered a Wildlife Ecol­ogy and Management Major. (Refer to p. 353 for foreign language requirements).~~  |
| ~~Major Requirements:~~  | ~~Sem. Hrs.~~  |
| ~~AGST 3543, Fundamentals of GIS/GPS~~  | ~~3~~  |
| ~~BIO 1303 AND 1301, Biology of Animals and Laboratory~~  | ~~4~~  |
| ~~BIO 1503 AND 1501, Biology of Plants and Laboratory~~  | ~~4~~  |
| ~~BIO 3013 AND 3311, Genetics and Laboratory~~  | ~~4~~  |
| ~~BIO 3023, Principles of Ecology~~  | ~~3~~  |
| ~~BIO 4704, Plant Systematics~~  | ~~4~~  |
| ~~BIO 4021, Biological Seminar~~  | ~~1~~  |
| ~~Select one of the following combinations:~~ ~~BIO 4311 AND 4312, Fishery Biology and Laboratory~~ ~~BIO 4402 AND 4401, Ichthyology and Laboratory~~ ~~BIO 4603 AND 4601, Limnology and Laboratory~~  | ~~3-4~~  |
| ~~Select two of the following combinations:~~ ~~BIO 4352 AND 4351, Mammalogy and Laboratory~~ ~~BIO 4423 AND 4421, Ornithology and Laboratory~~ ~~BIO 4412 AND 4411, Herpetology and Laboratory~~  | ~~6-7~~  |
| ~~BIO 4373 AND 4371, Animal Ecology and Laboratory~~  | ~~4~~  |
| ~~BIO 4413, Wildlife Program Internship~~  | ~~3~~  |
| ~~BIO 4653 AND 4651, Wildlife Management and Laboratory~~  | ~~4~~  |
| ~~BIO 4613, Conservation Biology~~  | ~~3~~  |
| ~~BIO 4663 AND 4661, Wildlife Management Techniques and Laboratory~~  | ~~4~~  |
| ~~CHEM 1023 AND 1021, General Chemistry II and Laboratory~~  | ~~4~~  |
| ~~ENG 3043,Technical Writing~~ ~~Or communication course to be approved by advisor or chair.~~  | ~~3~~  |
| ~~MATH 2194, Survey of Calculus~~  | ~~4~~  |
| ~~POSC 4533, Environmental Law and Administration~~  | ~~3~~  |
| ~~STAT 3233, Applied Statistics I~~  | ~~3~~  |
| ~~Botany Elective~~  | ~~3~~ |
| ~~Physical Sciences Elective~~~~GEOL 1003 AND 1001, Environmental Geology and Laboratory OR PSSC 2813 AND 2811, Soils and Soils Laboratory recommended.~~ | ~~4~~ |
| ~~Biology Electives~~  | ~~5-7~~ |
| ~~Sub-total~~  | ~~81~~ |
| ~~Total Required Hours:~~  | ~~120~~ |

**Major in Environmental Science**

Bachelor of Science

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

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| **University Requirements:**  |
| See University General Requirements for Baccalaureate degrees (p. 41)  |
| First Year Making Connections Course:  | Sem. Hrs.  |
| BIO 1013, Making Connections - Biology  | 3  |
| General Education Requirements:  | Sem. Hrs.  |
| See General Education Curriculum for Baccalaureate degrees (p. 83) Students with this major must take the following: MATH 1054, Precalculus Mathematics or MATH course that requires MATH 1023 as a prerequisite CHEM 1013 AND 1011, General Chemistry I and Laboratory BIO 2013 AND 2011, Biology of the Cell and Laboratory COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)  | 36  |
| Language Requirement:  | Sem. Hrs.  |
| A student must complete the foreign language requirements before being considered a Wildlife Ecol­ogy and Management Major. (Refer to p. 353 for foreign language requirements).  |
| Major Requirements:  | Sem. Hrs.  |
| AGST 3543, Fundamentals of GIS/GPS  | 3  |
| BIO 1063, People and the Environment | 3 |
| BIO 1303 AND 1301, Biology of Animals and Laboratory | 4 |
| BIO 1503 AND 1501, Biology of Plants and Laboratory  | 4  |
| BIO 3013 AND 3311, Genetics and Laboratory  | 4  |
| BIO 3023, Principles of Ecology  | 3  |
| Choose Two of the Following BIO 3673 Human Dimensions of Natural Resources BIO 4613 Conservation Biology GEOG 4613 Conservation of Natural Resources POSC 4533 Environmental Law and Administration  | 6  |
| Choose Two of the Following BIO 4623 Environmental Microbiology BIO 4633 Environmental Toxicology Mechanisms and Impacts GEOG 4113 Water Resources Planning RET 3113 Fundamentals and Applications of Renewable Energy  | 6 |
| BIO 4021, Biological Seminar  | 1  |
| CHEM 1023 AND 1021, General Chemistry II and Laboratory | 4 |
| CHEM 3103 AND 3101, Organic Chemistry I and Laboratory | 4 |
| Choose One of the following:CHEM 3113 AND 3111, Organic Chemistry II and LaboratoryCHEM 3054 Quantitative AnalysisCHEM 4053 Geochemistry | 3-4 |
| CHEM 4043 Environmental Chemistry | 3 |
| Choose Two of the Following GEOL 1003 Environmental Geology and GEOL 1001 Environmental Geology LabPHSC 1014 Energy and the Environment PSSC 2813 Soils and PSSC 2811 Soils Lab  | 8 |
| GEOL 4331 Hydrogeology Laboratory  | 1 |
| GEOL 4333 Hydrogeology  | 3 |
| GEOG 4623 Environmental Management  | 3 |
| MATH 2194 Survey of Calculus OR MATH 2204 Calculus I | 4 |
| PHYS 2054 General Physics I  | 4 |
| STAT 3233 Applied Statistics I  | 3 |
| Electives | 6-7 |
| Subtotal | 81 |
| Total Required Hours | 120 |

**LETTER OF NOTIFICATION – 11**

RECONFIGURATION OF EXISTING DEGREE PROGRAMS
(Consolidation or Separation of Degrees to Create New Degree)

1. **Institution submitting request**: Arkansas State University-Jonesboro
2. **Contact person/title**: Dr. Thomas Risch / Department Chair
3. **Title(s) of degree programs to be consolidated/reconfigured**: BS Wildlife Ecology & Management
4. **Current CIP Code(s)/Current Degree Code(s):** 03.0601
5. **Proposed title of consolidated/reconfigured program**: BS Environmental Science
6. **Proposed CIP Code for new program**: 03.0104
7. **Proposed Effective Date:** August 16, 2016
8. **Reason for proposed program consolidation/reconfiguration [Indicate student demand, (projected enrollment) for the proposed program and document that the program meets employer needs**]: This program reconfiguration is needed to provide students a prescribed degree plan that allows them to obtain a general, well-rounded degree in environmental science, including important aspects from the Wildlife Ecology and Management degree (such as human dimensions courses), while also emphasizing the chemistry and geology course work needed for a complete foundational understanding of terrestrial and aquatic abiotic environments. These physical and chemical properties of the environment (soil, water, geology, climate, weather) are the elements to which organisms are adapted, and maintaining functioning ecosystems depends upon appropriate environmental management to avoid negative impacts of pollution, climate change, and land-use change. We anticipate approximately 15 students majoring in this program. This program is heavy in biological and physical sciences and will prepare students for careers in environmental science, monitoring, and consulting as well as for any environmental science, biology, or chemistry graduate program.
9. **Provide current and proposed curriculum outline by semester** (see attached Word Documents).

**Indicate total semester credit hours required for the proposed pro**gram (120 hours).

**Underline new courses and provide new course descriptions. (If existing courses have been modified to create new courses, provide the course name/description for the current/existing courses and indicate the related new/modified courses.)** THERE ARE NO NEW COURSES NEEDED FOR THIS DEGREE.

**Identify required general education core courses with an X**.

1. **Provide program budget. Indicate amount of funds available for reallocation**. This new program relies on existing courses within Biological Sciences and other departments. It is an interdisciplinary major, and it will require support for regularly teaching courses. Therefore, the hiring of adjunct positions or permanent positions may be required in GEOL prefixes.
2. **Provide current and proposed organizational chart**. N/A
3. **Institutional curriculum committee review/approval date**:
4. **Are the existing degrees offered off-campus or via distance delivery?** No.
5. **Will the proposed degree be offered on-campus, off-campus, or via distance delivery?** No. **If yes, indicate mode of distance delivery**.
6. **Provide documentation that proposed program has received full approval by licensure/certification entity, if required. (A program offered for teacher/education administrator licensure must be reviewed/approved by the Arkansas Department of Education prior to consideration by the Coordinating Board; therefore, the Education Protocol Form also must be submitted to ADHE along with the Letter of Notification**). N/A
7. **Provide copy of e-mail notification to other institutions in the area of the proposed program**.
8. **List institutions offering similar program and identify the institution(s) used as a model to develop the proposed program**. The University of Central Arkansas has an interdisciplinary Environmental Science degree that is similar to the one proposed here. However, the two degrees differ in that the UCA offers Biology, Chemistry, and Planning and Administrative tracks, and the A-State degree proposed here provides a strong foundation in all three areas within the single degree. Our goal in redesigning this degree is to provide an interdisciplinary natural resource management program focused on the environmental (abiotic) factors as an alternative to our Wildlife, Fisheries & Conservation degree that emphasizes living (biotic) organisms.
9. **Provide scheduled program review date (within 10 years of program implementation).**
10. **Provide additional program information if requested by ADHE staff.**

President/Chancellor Approval Date:

Board of Trustees Notification Date:

Chief Academic Officer: Date:

**8-Semester Plan**

(**referenced in #9** - **Undergraduate Proposals Only)**

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| **Bachelor of Science Major:  Environmental Science 2016-2017** |
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| Students requiring developmental course work based on low entrance exam scores (ACT, SAT, ASSET, COMPASS) may not be able to complete this program of study in eight (8) semesters.  Developmental courses do not count toward total degree hours.  **Students having completed college level courses prior to enrollment will be assisted by their advisor in making appropriate substitutions.   In most cases, general education courses may be interchanged between semesters.**    A minimum of 45 hours of upper division credit (3000-4000 level) is required for this degree.  It is important to note that some upper-level degree requirements may be courses that are only offered once every two years. Students and advisors must become familiar with the cycle of teaching these courses. Students and advisors must also be aware that some courses may be taught only in Fall or Spring semesters. Mandatory state and institutional assessment exams will be required during your degree program.  ***Failure to participate in required assessments may delay graduation.*** |
| **Year 1** |   | **Year 1** |
| **Fall Semester** |   | **Spring Semester** |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| BIO 1013 | Biology Making Connections | 3 |  |  | BIO 1503 | Biology of Plants  | 3 |  |
| BIO 1303 | Biology of Animals | 3 |  |  | BIO 1501 | Biology of Plants Lab  | 1 |  |
| BIO 1301 | Biology of Animals Lab | 1 |  |  | CHEM 1013 | General Chemistry I  | 3 | X |
| ENG 1003 | Composition I | 3 | X |  | CHEM 1011 | General Chemistry I Lab  | 1 | X |
| MATH 1054  | Precalculus | 4 | X |  | ENG 1013 | Composition II | 3 | X |
| BIOL 1063 | People and the Environment | 3 |  |  | MATH 2194 | Survey of Calculus  | 4 |  |
| **Total Hours** |   | 17 |   |   | **Total Hours** |   | 15 |   |
| **Year 2** |   | **Year 2** |
| **Fall Semester** |   | **Spring Semester** |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| BIO 2013 | Biology of the Cell | 3 | X |  | BIO 3023 | Principles of Ecology | 3 |  |
| BIO 2011 | Biology of the Cell Lab | 1 | X |  | GEOL 1003/1001 | Environmental Geology / Lab | 4 |  |
| CHEM 1023 | General Chemistry II  | 3 |  |  |  | OR |  |
| CHEM 1021 | General Chemistry II Lab | 1 |  |  | PHSC 1014 | Energy and the Environment |  |
| AGRI 3543 | Fundamentals of GIS/GPS | 3 |  |  |  | OR |  |
| SCOM 1203 | Oral Communication | 3 | X |  | PSSC 2813/2811 | Soils / Lab |  |
|  |  |  |  |  |  | Social Science  | 3 | X |
|  |  |  |  |  | STAT 3233 | Applied Statistics I | 3 |  |
|  |  |  |  |  |  | Fine Arts | 3 | X |
| **Total Hours** |   | 14 |   |   | **Total Hours** |   | 16 |   |

**Program Budget**

**(referenced in # 10)**

Provide program budget. Indicate amount of funds available for reallocation.

NA

**Organizational Chart**

**(referenced in # 11)**

Provide current and proposed organizational chart. Include where the proposed program will be housed (department/college).

NA

**Written Notification to Other Institutions**

**(referenced in # 17)**

This should include a copy of written notification to other institutions in area of proposed program and responses

Enter text...

**Student Learning Outcomes**

Provide outcomes that students will accomplish during or at completion of this reconfigured degree. Fill out the following table to develop a 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.*

***Note: Best practices suggest 4-7 outcomes per program; minors would have 1 to 4 outcomes.***

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| **Outcome 1** | Students will be able to (SWBAT) discuss interactions with organisms and their environment. |
| Assessment Procedure Criterion | Graduating students will be provided a survey with relevant questions regarding this student-learning outcome.  |
| Which courses are responsible for this outcome? | BIO 1303 and 1301 Biology of Animals and Lab, BIO 1503 and 1501 Biology of Plants and Lab, BIO 3023 Principles of Ecology. |
| Assessment Timetable | After three years of data accumulation, we will analyze data for graduating student surveys to determine if our learning outcomes are being met. |
| Who is responsible for assessing and reporting on the results? | The Department of Biological Sciences Assessment Committee will be responsible for providing the surveys to graduates and reporting the results.  |

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| **Outcome 2** | SWBAT evaluate impact of current or proposed natural resource conservation strategies. |
| Assessment Procedure Criterion | Graduating students will be provided a survey with relevant questions regarding this student-learning outcome. Also, alumni will be surveyed 2-5 years after graduation to determine if the degree program prepared them for their careers in natural resource conservation. |
| Which courses are responsible for this outcome? | BIO 3673 Human Dimensions of Natural Resources, GEOG 4613 Conservation of Natural Resources, BIO 4613 Conservation Biology. |
| Assessment Timetable | After three years of data accumulation, we will analyze data for graduating student surveys to determine if our learning outcomes are being met. |
| Who is responsible for assessing and reporting on the results? | The Department of Biological Sciences Assessment Committee will be responsible for providing the surveys to graduates and reporting the results.  |

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| **Outcome 3** | SWBAT explain energy production, flow, and transformations. |
| Assessment Procedure Criterion | Graduating students will be provided a survey with relevant questions regarding this student-learning outcome.  |
| Which courses are responsible for this outcome? | PHSC 1014 Energy and the Environment, RET 3113 Fundamentals and Applications of Renewable Energy, BIOL 1063 People and the Environment, BIO 1503 and 1501 Biology of Plants and Lab. |
| Assessment Timetable | After three years of data accumulation, we will analyze data for graduating student surveys to determine if our learning outcomes are being met. |
| Who is responsible for assessing and reporting on the results? | The Department of Biological Sciences Assessment Committee will be responsible for providing the surveys to graduates and reporting the results.  |

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| **Outcome 4** | SWBAT communicate physical components of the environment upon which life depends. |
| Assessment Procedure Criterion | Graduating students will be provided a survey with relevant questions regarding this student-learning outcome.  |
| Which courses are responsible for this outcome? | BIO 1303 and 1301 Biology of Animals and Lab, BIO 1503 and 1501 Biology of Plants and Lab, BIO 3023 Principles of Ecology, GEOL 1003 and 1001 Environmental Geology and Lab, PSSC 2813 and 2811 Soils and Lab, CHEM 4043 Environmental Chemistry, CHEM 4053 Geochemistry |
| Assessment Timetable | After three years of data accumulation, we will analyze data for graduating student surveys to determine if our learning outcomes are being met. |
| Who is responsible for assessing and reporting on the results? | The Department of Biological Sciences Assessment Committee will be responsible for providing the surveys to graduates and reporting the results.  |

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| **Outcome 5** | SWBAT evaluate strategies for managing high quality environments for humans and other organisms. |
| Assessment Procedure Criterion | Graduating students will be provided a survey with relevant questions regarding this student-learning outcome. Also, alumni will be surveyed 2-5 years after graduation to determine if the degree program prepared them for their careers in natural resource conservation.  |
| Which courses are responsible for this outcome? | GEOG 4623 Environmental Management, BIO 3673 Human Dimensions of Natural Resources, GEOG 4613 Conservation of natural Resources, BIO 4613 Conservation Biology, POSC Environmental Law and Administration |
| Assessment Timetable | After three years of data accumulation, we will analyze data for graduating student surveys to determine if our learning outcomes are being met. |
| Who is responsible for assessing and reporting on the results? | The Department of Biological Sciences Assessment Committee will be responsible for providing the surveys to graduates and reporting the results.  |

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| **Outcome 6** | SWBAT examine genetic mechanisms and explain their principles. |
| Assessment Procedure Criterion | Graduating students will be provided a survey with relevant questions regarding this student-learning outcome.  |
| Which courses are responsible for this outcome? | BIO 1303 and 1301 Biology of Animals and Lab, BIO 1503 and 1501 Biology of Plants and Lab, BIOL 2013 and 2011 Biology of the Cell and Lab, BIO 3013 and 3011 Genetics and Lab. |
| Assessment Timetable | After three years of data accumulation, we will analyze data for graduating student surveys to determine if our learning outcomes are being met. |
| Who is responsible for assessing and reporting on the results? | The Department of Biological Sciences Assessment Committee will be responsible for providing the surveys to graduates and reporting the results.  |