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

**Bulletin / Banner Change Transmittal Form**

**[x] Undergraduate Curriculum Council**

**[ ] 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 for inclusion in curriculum committee agenda.

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| David Gilmore | 3/27/2018 |

**Department Curriculum Committee Chair** |

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**COPE Chair (if applicable)** |
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| Thomas Risch | 3/27/2018 |

**Department Chair:**  |

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**Head of Unit (If applicable)**   |
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| David Gilmore | 3/27/2018 |

**College Curriculum Committee Chair** |

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**Undergraduate Curriculum Council Chair** |
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| Anne A. Grippo | 3/27/2018 |

**College Dean** |

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**Graduate Curriculum Committee Chair** |
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**General Education Committee Chair (If applicable)**   |

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**Vice Chancellor for Academic Affairs** |

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

Dr. Tom Risch, trisch@astate.edu, (870) 972-3082

**2.Proposed Change**

Add a list of approved courses to the botany elective in the BS Biological Sciences Zoology Emphasis and the Botany and Zoology electives in the BS Wildlife, Fisheries and Conservation Emphases in Fisheries and Wildlife. Correct the Bulletin including omissions and errors, and making common substitutions into alternate choices.

**3.Effective Date**

Fall 2018

**4.Justification –** *Please provide details as to why this change is necessary.*

This will cut down on the number of substitutions the department needs to submit for this degree requirement.

**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.* |

Major in Biological Sciences

Bachelor of Science

Emphasis in Zoology

A complete 8-semester degree plan is available at https://www.astate.edu/info/academics/degrees/

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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. 84)**Students with this major must take the following:***MATH 1023, College Algebra 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)* | **35** |
| **Language Requirement:** | **Sem. Hrs.** |
| *A student must complete the foreign language requirements before being considered a Biological Sciences Major. (Refer to Department of Biological Sciences Foreign Language Requirement).* |  |
| **Major Requirements:** | **Sem. Hrs.** |
| BIO 1303 **AND** 1301, Biology of Animals and Laboratory | 4 |
| BIO 1503 **AND** 1501, Biology of Plants and Laboratory | 4 |
| BIO 3013 **AND** 3011, Genetics and Laboratory | 4 |
| BIO 3023, Principles of Ecology | 3 |
| 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 |
| CHEM 3113 **AND** 3111, Organic Chemistry II and Laboratory | 4 |
| MATH 2194, Survey of Calculus **OR**MATH 2204, Calculus I | 4 |
| PHYS 2054, General Physics I | 4 |
| PHYS 2064, General Physics II | 4 |
| **Sub-total** | **40** |
| **Emphasis Area (Zoology):** | **Sem. Hrs.** |
| BIO 3302 **AND** 3312, Comparative Anatomy and Laboratory | 4 |
| BIO 3303 **AND** 3301, General Entomology and Laboratory **OR**BIO 3322 **AND** 3332, Invertebrate Zoology and Laboratory | 4 |
| BIO 3323 **AND** 3321, Animal Physiology and Laboratory | 4 |
| BIO 4332 **AND** 4342, Animal Histology and Laboratory | 4 |
| BIO 4343 **AND** 4341, Animal Embryology and Laboratory | 4 |
| STAT 3233, Applied Statistics I **OR**CHEM 4243, Biochemistry | 3 |
| Botany elective ~~(consult advisor for appropriate course numbers)~~BIO 3501, Wild Flowers of Arkansas **AND**  BIO 3511. Wild Flowers of Arkansas Laboratory.BIO 3541. Plant Pathology Laboratory **AND**  BIO 3542. Plant PathologyBIO 3553. Economic BotanyBIO 4513. Plant PhysiologyBIO 4521. Wetland Plant Ecology Laboratory **AND** BIO 4522. Wetland Plant EcologyBIO 4541. Mycology Laboratory **AND**  BIO 4542. MycologyBIO 4551. Medical Mycology Laboratory **AND**  BIO 4552. Medical MycologyBIO 4704. Plant SystematicsBIO 4714. DendrologyOther courses approved by advisor | 3 |
| Biology electives (BIO prefix; consult advisor for appropriate course numbers) | 6 |
| **Sub-total** | **32** |
| **Electives:** | **Sem. Hrs.** |
| Electives (six hours must be upper-level) | **10** |
| **Total Required Hours:** | **120** |

**Major in Wildlife, Fisheries and Conservation**

**Bachelor of Science**

**Emphasis in Fisheries**

A complete 8-semester degree plan is available at https://www.astate.edu/info/academics/degrees/

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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. 84)**Students with this major must take the following:***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)*  | ~~35-~~**36** |
| **Language Requirement:** | **Sem. Hrs.** |
| *A student must complete the foreign language requirements before being considered a Major in Wildlife, Fisheries and Conservation Major. (Refer to Department of Biological Sciences Foreign Language Requirement).* |  |
| **Major Requirements:** | **Sem. Hrs.** |
| See emphasis area below. | **-** |
| **Emphasis Area (Fisheries):** | **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** 3011, Genetics and Laboratory  | 4 |
| BIO 3023, Principles of Ecology  | 3 |
| BIO 3033, Evolution **OR** BIO 4333, Marine Biology | 3 |
| BIO 4021, Biological Seminar  | 1 |
| BIO 4301 AND 4302, Aquatic Entomology and Laboratory | 3 |
| BIO 4312 AND 4311, Fisheries Biology and Laboratory | 3 |
| BIO 4362, Applied Aquaculture **OR** BIO 4372, Applied Fisheries  | 2 |
| BIO 4402 AND 4401, Ichthyology and Laboratory | 3 |
| BIO 4443, Fisheries Program Internship | 3 |
| BIO 4603 AND 4601, Limnology and Laboratory | 4 |
| CHEM 1023 AND 1021, General Chemistry II and Laboratory | 4 |
| MATH 2194, Survey of Calculus **OR** MATH 2204, Calculus I | 4 |
| PHYS 2054, General Physics I | 4 |
| PHYS 2064, General Physics II | 4 |
| STAT 3233, Applied Statistics I | 3 |
| **Select two of the following:**BIO 3673, Human Dimensions of Natural ResourcesBIO 4613, Conservation BiologyPOSC 4533, Environmental Law and Administration | 6 |
| Botany electiveBIO 3501, Wild Flowers of Arkansas **AND**  BIO 3511. Wild Flowers of Arkansas Laboratory.BIO 3541. Plant Pathology Laboratory **AND**  BIO 3542. Plant PathologyBIO 3553. Economic BotanyBIO 4513. Plant PhysiologyBIO 4521. Wetland Plant Ecology Laboratory **AND** BIO 4522. Wetland Plant EcologyBIO 4541. Mycology Laboratory **AND**  BIO 4542. MycologyBIO 4551. Medical Mycology Laboratory **AND**  BIO 4552. Medical MycologyBIO 4704. Plant SystematicsBIO 4714. DendrologyOther courses approved by advisor | 3 |
| Zoology electiveBIO 3301 General Entomology Laboratory AND BIO 3303 General Entomology BIO 3311 Economic Entomology Laboratory AND BIO 3313 Economic Entomology BIO 3302 Comparative Anatomy AND BIO 3312 Comparative Anatomy Laboratory BIO 3322 Invertebrate Zoology AND BIO 3332 Invertebrate Zoology LaboratoryBIO 3321 Animal Physiology Laboratory AND BIO 3323 Animal Physiology BIO 4322 Marine Mammals Laboratory ANDBIO 4323 Biology of Marine MammalsBIO 4332 Animal Histology AND BIO 4342 Animal Histology LaboratoryBIO 4333 Marine BiologyBIO 4351 Mammology Laboratory AND BIO 4352 MammalogyBIO 4362 Applied AquacultureBIO 4372 Applied FisheriesBIO 4343 Animal Embryology AND BIO 4341 Animal Embryology LaboratoryBIO 4361 Mammalian Neurobiology Laboratory AND BIO 4363 Mammalian Neurobiology BIO 4371 Animal Ecology Laboratory AND BIO 4373 Animal EcologyBIO 4382 Parasitology AND BIO 4392 Parasitology LaboratoryBIO 4403 Comparative Vertebrate Reproduction BIO 4411 Herpetology Laboratory AND BIO 4412 Herpetology BIO 4421 Ornithology Laboratory AND BIO 4423 OrnithologyBIO 4433 Field Experience in Marine Environments~~Electives~~*~~At least three (3) credit hours~~* ~~must be Botany electives and at least three (3) credit hours~~ *~~must be Zoology electives. See advisor for additional information.~~* | 3~~16-17~~  |
| ElectivesChoose from Botany and/or Zoology electives above.An individual course cannot be used as both a required course and an elective. | 10~~-11~~ |
| **Sub-total** | **81**~~-82~~ |
| **Total Required Hours:** | **120** |

**Major in Wildlife, Fisheries and Conservation**

**Bachelor of Science**

**Emphasis in Wildlife**

A complete 8-semester degree plan is available at https://www.astate.edu/info/academics/degrees/

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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. 84)**Students with this major must take the following:***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)*  | **~~35-~~36** |
| **Language Requirement:** | **Sem. Hrs.** |
| *A student must complete the foreign language requirements before being considered a Major in Wildlife, Fisheries and Conservation Major. (Refer to Department of Biological Sciences Foreign Language Requirement).* |  |
| **Major Requirements:** | **Sem. Hrs.** |
| See emphasis area below. | **-** |
| **Emphasis Area (Wildlife):** | **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** 3011, Genetics and Laboratory  | 4 |
| BIO 3023, Principles of Ecology  | 3 |
| BIO 4021, Biological Seminar  | 1 |
| BIO 4311 **AND** 4312, Fishery Biology and Laboratory **OR**BIO 4402 **AND** 4401, Ichthyology and Laboratory **OR**BIO 4603 **AND** 4601, Limnology and Laboratory | 3-4 |
| BIO 4373 **AND** 4371, Animal Ecology and Laboratory  | 4 |
| BIO 4413, Wildlife Program Internship **OR** BIO 403V Special Problems in Biology | 3 |
| ~~BIO 4613, Conservation Biology~~ | ~~3~~ |
| BIO 4653 **AND** 4651, Wildlife Management and Laboratory | 4 |
| BIO 4663 **AND** 4661, Wildlife Management Investigational Techniques and Laboratory  | 4 |
| BIO 4704, Plant Systematics | 4 |
| CHEM 1023 **AND** 1021, General Chemistry II and Laboratory | 4 |
| GEOL 1003 **AND** 1001, Environmental Geology and Laboratory **OR**PSSC 2813 **AND** 2811, Soils and Laboratory | 4 |
| MATH 2194, Survey of Calculus **OR** MATH 2204, Calculus I | 4 |
| STAT 3233 Applied Statistics | 3 |
| **Select two of the following:**BIO 3673, Human Dimensions of Natural ResourcesBIO 4613, Conservation BiologyPOSC 4533, Environmental Law and Administration | 6 |
| **Select two of the following:**BIO 4352 AND 4351, Mammalogy and Laboratory BIO 4412 AND 4411, Herpetology and LaboratoryBIO 4423 AND 4421, Ornithology and Laboratory | 6-7 |
| Botany electiveBIO 3501 **AND** BIO 3511, Wild Flowers of Arkansas and Laboratory.BIO 3542 **AND** BIO 3541, Plant Pathology and Laboratory BIO 3553. Economic BotanyBIO 4513. Plant PhysiologyBIO 4522 **AND** BIO 4521, Wetland Plant Ecology and Laboratory BIO 4542 **AND** BIO 4541, Mycology and Laboratory BIO 4552 **AND** BIO 4551, Medical Mycology and Laboratory BIO 4714, DendrologyOther courses approved by advisor | 3 |
| Communication ElectiveENG 3043. Technical Writing*See advisor for acceptable substitutions.* | 3 |
| Zoology ElectivesBIO 3303 **AND** BIO 3301, General Entomology and Laboratory BIO 3313 **AND** BIO 3311 Economic Entomology and Laboratory BIO 3302 **AND** BIO 3312 Comparative Anatomy and Laboratory BIO 3322 **AND** BIO 3332, Invertebrate Zoology and LaboratoryBIO 3323 **AND** BIO 3321, Animal Physiology and Laboratory BIO 4322 **AND** BIO 4323, Biology of Marine Mammals and Laboratory BIO 4332 **AND** BIO 4342 Animal Histology and LaboratoryBIO 4333 Marine BiologyBIO 4343 **AND** BIO 4341, Animal Embryology and LaboratoryBIO 4352 **AND** BIO 4351 Mammology and LaboratoryBIO 4362 Applied AquacultureBIO 4363 **AND** BIO 4361, Mammalian Neurobiology and Laboratory BIO 4372 Applied FisheriesBIO 4382 **AND** BIO 4392 Parasitology and LaboratoryBIO 4403 Comparative Vertebrate Reproduction BIO 4412 **AND** BIO 4411 Herpetology and Laboratory BIO 4423 **AND** BIO 4421 Ornithology and LaboratoryBIO 4433 Field Experience in Marine EnvironmentsAn individual course cannot be used as both a required course and an elective. | 5-7 |
| ~~Electives~~*~~Must include~~* ~~Botany and~~ *~~Communications electives. See advisor for additional information~~.* | ~~11-14~~ |
| **Sub-total** | **81**~~-82~~ |
| **Total Required Hours:** | **120** |