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

**Program Modification Form**

**[X] Undergraduate Curriculum Council**

**[ ] Graduate Council**

|  |
| --- |
| **Modification Type: [ ]Admissions, [ ]Curricular Sequence, or [X]Other** |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | David F. Gilmore | 1/2/2021 |   **Department Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **COPE Chair (if applicable)** |
| |  |  | | --- | --- | | Stephen J. Mullin | 2/2/2021 |   **Department Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Head of Unit (if applicable)** |
| |  |  | | --- | --- | | John Hershberger | 2/9/2021 |   **College Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Undergraduate Curriculum Council Chair** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Director of Assessment** *(only for changes impacting assessment)* | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Graduate Curriculum Committee Chair** |
| |  |  | | --- | --- | | Lynn Boyd | 2/12/2021 |   **College Dean** | |  |  | | --- | --- | | Alan Utter | 3/15/2021 |   **Vice Chancellor for Academic Affairs** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **General Education Committee Chair (if applicable)** |  |

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

Virginie Rolland, vrolland@astate.edu, 870-972-3194

Anne Grippo, agrippo@astate.edu, 870-972-3079

1. **Proposed Change** (for undergraduate curricular changes please provide an 8-semester plan (appendix A), if applicable)

We propose to change the Communication Elective in the Wildlife, Fisheries and Conservation – Wildlife emphasis (WFC-Wildlife) curriculum to ENG 3063 as a Communication requirement.

1. **Effective Date**

Fall 2021

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

The WFC-Wildlife degree currently includes a required Communication Elective. Most students have been taking ENG 3043 Technical Writing as their Communication Elective. Recently, a new course, ENG 3063 Writing for STEM, has been developed. This course is tailored to STEM majors, which is clearly more relevant than ENG 3043. Additionally, ENG 3063 is to be taken concurrently with BIO 2011 Biology of the Cell Lab, a lab course that WFC-Wildlife students must take. ENG 3063 uses the lab report assignments of BIO 2011 as a basis to apply scientific writing skills. This course also helps students read and understand the scientific literature. Overall, this course prepares STEM students to be better critical thinkers and communicators in addition to preparing them for lab reports in future biology courses (e.g., BIO 3011 Genetics). Alternative options for the Communication elective are not as relevant as ENG 3063. For all these reasons, we believe that changing the elective to ENG 3063 as a requirement would benefit students in the WFC-Wildlife degree. Faculty members involved with this degree and advising students in this degree are all in favor of this change.

**Bulletin Changes**

|  |
| --- |
| **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.** |

p.400-402 | Before modifications

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/>

|  |  |
| --- | --- |
| **University Requirements:** | |
| See University General Requirements for Baccalaureate degrees (p. 42) | |
| **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. 78)  **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)* | **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 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 I | 3 |

Major in Wildlife, Fisheries and Conservation (cont.)

**Bachelor of Science**

**Emphasis in Wildlife**

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

|  |  |
| --- | --- |
| **Select two of the following:**  BIO 3673, Human Dimensions of Natural Resources  BIO 4613, Conservation Biology  POSC 4533, Environmental Law and Administration | 6 |
| **Select two of the following:**  BIO 4352 **AND** 4351, Mammalogy and Laboratory  BIO 4412 **AND** 4411, Herpetology and Laboratory  BIO 4423 **AND** 4421, Ornithology and Laboratory | 6-7 |
| **Botany elective:**  BIO 3501 **AND** BIO 3511, Wild Flowers of Arkansas and Laboratory.  BIO 3542 **AND** BIO 3541, Plant Pathology and Laboratory  BIO 3553. Economic Botany  BIO 4513. Plant Physiology  BIO 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, Dendrology  *Other courses approved by advisor* | 3 |
| **Communication elective:**  ENG 3043. Technical Writing  *See advisor for acceptable substitutions.* | 3 |
| **Zoology electives:**  BIO 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 Laboratory  BIO 4322 **AND** BIO 4323, Biology of Marine Mammals and Laboratory  BIO 4332 **AND** BIO 4342, Animal Histology and Laboratory  BIO 4333, Marine Biology  BIO 4343 **AND** BIO 4341, Animal Embryology and Laboratory  BIO 4352 **AND** BIO 4351, Mammology and Laboratory  BIO 4362, Applied Aquaculture  BIO 4363 **AND** BIO 4361, Mammalian Neurobiology and Laboratory  BIO 4372, Applied Fisheries  BIO 4382 **AND** BIO 4392, Parasitology and Laboratory  BIO 4403, Comparative Vertebrate Reproduction  BIO 4412 **AND** BIO 4411, Herpetology and Laboratory  BIO 4423 **AND** BIO 4421, Ornithology and Laboratory  BIO 4433, Field Experience in Marine Environments  BIO 4443 **AND** 4441, Comparative Animal Physiology and Laboratory  *An individual course cannot be used as both a required course and an elective.* | 5-7 |
| **Sub-total** | **81** |
| **Total Required Hours:** | **120** |

Department of Biological Sciences Minors

Minor in Biology

|  |  |
| --- | --- |
| **Required Courses:**  BIOL 1003 **AND** 1001, Biological Science and Laboratory may be substituted for one (1) of the core combinations, but this is NOT recommended; Biological Science does NOT serve as a prerequisite for any upper-level electives, so choosing this course as one of the core courses may limit the choices of electives that students may choose. | **Sem. Hrs.** |
| **Select two of the following core combinations:**  BIO 1303 **AND** 1301, Biology of Animals and Laboratory  BIO 1503 **AND** 1501, Biology of Plants and Laboratory  BIO 2013 **AND** 2011, Biology of the Cell and Laboratory | 8 |
| Upper-level BIO Electives including co-requisite laboratory sections if applicable | 12 |
| **Total Required Hours:** | **20** |

Minor in Marine Science

|  |  |
| --- | --- |
| **Required Courses:***.*  Other applicable courses may be added in the future to select from as appropriate. | **Sem. Hrs.** |
| BIO 4333, Marine Biology | 3 |
| BIO 4433, Field Experiences in Marine Systems | 3 |
| BIO 4413, Wildlife Internship | 3 |
| **Electives (select six hours from the following):**  *Other courses may be substituted with departmental approval.*  BIO 4323, Marine Mammals  BIO 4322, Marine Mammals Laboratory  BIO 4402, Ichthyology  BIO 4401, Ichthyology Laboratory  BIO 3322, Invertebrate Zoology  BIO 3332, Invertebrate Zoology Laboratory | 6 |
| **Total Required Hours:** | **18** |

**Department of Biological Sciences Certificate**

**Certificate in Health Coaching**

|  |  |
| --- | --- |
| **Required Courses:***.*  Other applicable courses may be added in the future to select from as appropriate. | **Sem. Hrs.** |
| BIO 3251, Introduction to Pathology | 1 |
| BIO 3261, Health Coaching I | 1 |
| BIO 3271, Health Coaching II | 1 |
| BIO 3241, Physical Diagnosis | 1 |
| BIO 2013 and BIO 2011, Biology of the Cell and Laboratory | 4 |
| BIO 3223 and BIO 3221, Human Structure and Function I and Laboratory | 4 |
| BIO 3233 and BIO 3231, Human Structure and Function I and Laboratory | 4 |
| BIO 3203, Pathophysiology | 3 |
| **Electives (select one of the following):**  *Other courses may be substituted with departmental approval.*  BIO 3013 and BIO 3011, Genetics and Laboratory  BIO 4104, Microbiology  BIO 4223, Human Endocrinology | 3-4 |
| **Total Required Hours:** | **22-23** |

p.400-402 | after modifications

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/>

|  |  |
| --- | --- |
| **University Requirements:** | |
| See University General Requirements for Baccalaureate degrees (p. 42) | |
| **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. 78)  **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)* | **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 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 I | 3 |

Major in Wildlife, Fisheries and Conservation (cont.)

**Bachelor of Science**

**Emphasis in Wildlife**

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

|  |  |
| --- | --- |
| **Select two of the following:**  BIO 3673, Human Dimensions of Natural Resources  BIO 4613, Conservation Biology  POSC 4533, Environmental Law and Administration | 6 |
| **Select two of the following:**  BIO 4352 **AND** 4351, Mammalogy and Laboratory  BIO 4412 **AND** 4411, Herpetology and Laboratory  BIO 4423 **AND** 4421, Ornithology and Laboratory | 6-7 |
| **Botany elective:**  BIO 3501 **AND** BIO 3511, Wild Flowers of Arkansas and Laboratory.  BIO 3542 **AND** BIO 3541, Plant Pathology and Laboratory  BIO 3553. Economic Botany  BIO 4513. Plant Physiology  BIO 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, Dendrology  *Other courses approved by advisor* | 3 |
| **Communication requirement:**  ENG 3063, Writing for STEM | 3 |
| **Zoology electives:**  BIO 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 Laboratory  BIO 4322 **AND** BIO 4323, Biology of Marine Mammals and Laboratory  BIO 4332 **AND** BIO 4342, Animal Histology and Laboratory  BIO 4333, Marine Biology  BIO 4343 **AND** BIO 4341, Animal Embryology and Laboratory  BIO 4352 **AND** BIO 4351, Mammology and Laboratory  BIO 4362, Applied Aquaculture  BIO 4363 **AND** BIO 4361, Mammalian Neurobiology and Laboratory  BIO 4372, Applied Fisheries  BIO 4382 **AND** BIO 4392, Parasitology and Laboratory  BIO 4403, Comparative Vertebrate Reproduction  BIO 4412 **AND** BIO 4411, Herpetology and Laboratory  BIO 4423 **AND** BIO 4421, Ornithology and Laboratory  BIO 4433, Field Experience in Marine Environments  BIO 4443 **AND** 4441, Comparative Animal Physiology and Laboratory  *An individual course cannot be used as both a required course and an elective.* | 5-7 |
| **Sub-total** | **81** |
| **Total Required Hours:** | **120** |

Department of Biological Sciences Minors

Minor in Biology

|  |  |
| --- | --- |
| **Required Courses:**  BIOL 1003 **AND** 1001, Biological Science and Laboratory may be substituted for one (1) of the core combinations, but this is NOT recommended; Biological Science does NOT serve as a prerequisite for any upper-level electives, so choosing this course as one of the core courses may limit the choices of electives that students may choose. | **Sem. Hrs.** |
| **Select two of the following core combinations:**  BIO 1303 **AND** 1301, Biology of Animals and Laboratory  BIO 1503 **AND** 1501, Biology of Plants and Laboratory  BIO 2013 **AND** 2011, Biology of the Cell and Laboratory | 8 |
| Upper-level BIO Electives including co-requisite laboratory sections if applicable | 12 |
| **Total Required Hours:** | **20** |

Minor in Marine Science

|  |  |
| --- | --- |
| **Required Courses:***.*  Other applicable courses may be added in the future to select from as appropriate. | **Sem. Hrs.** |
| BIO 4333, Marine Biology | 3 |
| BIO 4433, Field Experiences in Marine Systems | 3 |
| BIO 4413, Wildlife Internship | 3 |
| **Electives (select six hours from the following):**  *Other courses may be substituted with departmental approval.*  BIO 4323, Marine Mammals  BIO 4322, Marine Mammals Laboratory  BIO 4402, Ichthyology  BIO 4401, Ichthyology Laboratory  BIO 3322, Invertebrate Zoology  BIO 3332, Invertebrate Zoology Laboratory | 6 |
| **Total Required Hours:** | **18** |

**Department of Biological Sciences Certificate**

**Certificate in Health Coaching**

|  |  |
| --- | --- |
| **Required Courses:***.*  Other applicable courses may be added in the future to select from as appropriate. | **Sem. Hrs.** |
| BIO 3251, Introduction to Pathology | 1 |
| BIO 3261, Health Coaching I | 1 |
| BIO 3271, Health Coaching II | 1 |
| BIO 3241, Physical Diagnosis | 1 |
| BIO 2013 and BIO 2011, Biology of the Cell and Laboratory | 4 |
| BIO 3223 and BIO 3221, Human Structure and Function I and Laboratory | 4 |
| BIO 3233 and BIO 3231, Human Structure and Function I and Laboratory | 4 |
| BIO 3203, Pathophysiology | 3 |
| **Electives (select one of the following):**  *Other courses may be substituted with departmental approval.*  BIO 3013 and BIO 3011, Genetics and Laboratory  BIO 4104, Microbiology  BIO 4223, Human Endocrinology | 3-4 |
| **Total Required Hours:** | **22-23** |

Paste bulletin pages here...

**Appendix A, 8-Semester Plan**

(**Referenced in #2** - **Undergraduate Proposals Only)**

*Instructions: Please identify new courses in italics*.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Arkansas State University-Jonesboro**  **Degree: Bachelor of Science**  **Major: Wildlife, Fisheries & Conservation**  **Year: 2021-2022** | | | | | | | | |
| 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. | | | | | | | | |
| **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 +  BIO 1501 | Biology of Plants + Lab | 3 + 1 |  |
| BIO 1303 + BIO 1301 | Biology of Animals + Lab | 3 + 1 |  |  | CHEM 1013 + CHEM 1011 | General Chemistry I + Lab | 3 + 1 | X |
| ENG 1003 | Composition I | 3 | X |  | ENG 1013 | Composition II | 3 | X |
| MATH 1054 | Precalculus (if ACT Math ≥ 24) | 3-4 | X |  | MATH 2194 | Survey of Calculus | 4 | X |
|  | OR |  |  |  |  |  |  |
| MATH 1023 | College Algebra |  |  |  |  |  |  |
| LIR 1021 | Introduction to Academic Research Biology  OR another course of 1-2 hour | 1-2 |  |  |  |  |  |  |
| **Total Hours** |  | 15 |  |  | **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 + BIO 2011 | Biology of the Cell + Lab | 3 + 1 | X |  | BIO 3023 | Principles of Ecology | 3 |  |
| ENG 3063 | Writing for STEM (communication concurrent with BIO 2011) | 3 |  |  | PSSC 2813 + PSSC 2811 | Soils + Lab | 4 |  |
| COMS 1203 | Oral Communication | 3 | X |  |  | Choose one the following: |  |  |
| CHEM 1023 + CHEM 1021 | General Chemistry II + Lab | 3 + 1 |  |  | BIO 4312+BIO 4311 | Fisheries Biology + Lab | 3-4 |  |
|  | Social Science #1 | 3 | X |  | BIO 4402+BIO 4401 | Ichthyology + Lab |  |
|  |  |  |  |  |  | Zoology elective #1 |  |
|  |  |  |  |  |  | Social Science #2 | 3 | X |
|  |  |  |  |  |  | Fine Arts | 3 | X |
| **Total Hours** |  | 17 |  |  | **Total Hours** |  | 16-17 |  |
| **Year 3** | | | |  | **Year 3** | | | |
| **Fall Semester** | | | |  | **Spring Semester** | | | |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
|  | Choose one of the following: | 3-4 |  |  | BIO 4613 | Conservation Biology | 3 |  |
| BIO 4352 + BIO 4351 | Mammalogy + Lab |  |  |  | OR |  |  |
|  | Zoology elective #1 or #2 |  |  | POSC 4533 | Environmental Law and Administration |  |  |
| BIO 4603 + BIO 4601 | Limnology + Lab |  |  | BIO 3013 +  BIO 3011 | Genetics + Lab | 3 + 1 |  |
|  | Botany elective | 3-4 |  |  | BIO 4663 +  BIO 4661 | Wildlife Management Techniques + Lab | 3 + 1 |  |
| BIO 4413 | Wildlife Internship | 3 |  |  |  | Choose one of the following: | 3-4 |  |
| BIO 3673 | Human Dimensions in Wildlife | 3 |  |  | BIO 4453+BIO 4411 | Herpetology + Lab |  |
|  | US History (to or since 1876) or American Government | 3 | X |  | BIO 4423+BIO 4421 | Ornithology + Lab |  |
|  |  |  |  |  |  | Zoology elective #1 or #2 |  |
| **Total Hours** |  | 14-16 |  |  | **Total Hours** |  | 14-15 |  |
| **Year 4** | | | |  | **Year 4** | | | |
| **Fall Semester** | | | |  | **Spring Semester** | | | |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| BIO 4373 + BIO 4371 | Animal Ecology + Lab | 3 + 1 |  |  | BIO 4021 | Biological Seminar | 1 |  |
| BIO 4653 + BIO 4651 | Wildlife Management + Lab | 3 + 1 |  |  | BIO 4704 | Plant Systematics | 4 |  |
| BIO 4043 | Biometry | 3 |  |  | AGRI 3543 | Fundamentals of GIS/GPS | 3 |  |
|  | OR |  |  |  | Choose two of the following: | 7-8 |  |
| STAT 3233 | Applied Stat I |  |  | BIO 4453 + BIO 4411 | Herpetology + Lab |  |
|  | Humanities | 3 | X |  | BIO 4423 + BIO 4421 | Ornithology + Lab |  |
|  |  |  |  |  |  | Zoology elective #2 |  |
| **Total Hours** |  | 14 |  |  | **Total Hours** |  | 15-16 |  |
| **Total Jr/Sr Hours \_\_\_ Total Degree Hours \_\_\_** | | | | | | | | |
| **Graduation Requirements:** | | | | | | | | |