**PROGRAM CHANGES**

 WEBER STATE UNIVERSITY

**Submission Date:** 16 January 2015

**Submitter Name:** Chris Hoagstrom

**College:** Science

**Department**: Zoology

**Program Title:** Bachelor of Science Degree

Check all that apply:

\_\_\_\_New course(s) required for major, minor, emphasis, or concentration.

\_\_\_\_Modified course(s) required for major, minor, emphasis, or concentration.

\_\_\_\_Credit hour change(s) required for major, minor, emphasis, or concentration.

\_\_\_\_Credit hour change(s) for a course which is required for the major, minor, emphasis, or concentration.

\_\_\_\_Attribute change(s) for any course.

\_\_\_\_Program name change.

\_\_\_\_Deletion of required course(s).

\_\_\_\_Program mode of delivery/format change (Graduate Programs ONLY)

\_\_**X**\_\_Other changes (specify) \_\_**Proposed changes are largely a re-organization of required courses with addition of a new requirement using existing courses**\_\_

**JUSTIFICATION:**

The first goal of this proposed change is to ensure that students complete at least three upper-division elective courses as part of the major. As the Zoology BS requirements presently stand, it is possible that students serving as lab instructors or conducting independent research can gain enough hours via these means to avoid taking any upper-division courses at all and the Department has determined this to be undesirable and not in keeping with the original intent of requiring students to complete upper-division credit. The modification of the requirement would be that three upper-division courses would be required as part of the major and we propose to modify the list of courses fulfilling this requirement so that only true courses will qualify.

The second goal of this proposed change is to establish a new requirement for two credit hours that could be satisfied in one of the following ways:

1. Via another (i.e., 4th) upper-division elective course;
2. Via independent study;
3. Via cooperative work experience;
4. Via serving as a lab instructor;
5. Via other short courses or “topics” courses.

Our records indicate that many of our majors already gain credit hours by one of these venues. We believe this type of experience is valuable, although it does not take the place of actual coursework. However, for those students who would be averse to or unable to take part in these alternative learning experiences, we leave them the option of taking an additional (4th) upper-division elective course.

Copy the present program from the current catalog and add the required changes (exactly as you wish them to appear in the catalog). Use strikeout (~~strikeout~~) when deleting items in the program and highlight (highlight) when adding items. If multiple changes are being proposed, please provide a summary.

After the appropriate Approvals, **Email the electronic file (Microsoft Word .docx) to** bstockberger @weber.edu You may scan the Approval Page with the Signatures and email it, send a hard copy to MC 1033 through campus mail or bring to the Faculty Senate Office MA210J. Send all supporting documents pertaining to your proposal.

**Zoology Courses Required (28 credit hours)**

ZOOL 1110 - Principles of Zoology I Credits: (4)

ZOOL 1120 - Principles of Zoology II Credits: (4)

ZOOL 3200 - Cell Biology Credits: (4)

ZOOL 3300 - Genetics Credits: (4)

ZOOL 3450 - Ecology Credits: (4)

ZOOL 3600 - Comparative Physiology Credits: (4)

ZOOL 3720 - Evolution Credits: (3)

ZOOL 4990 - Seminar Credits: (1)

**~~Elective Zoology Courses (12 credit hours)~~**

**Upper-division electives: s~~S~~elect a minimum of ~~12~~ three upper division courses ~~credit hours~~.**

~~ZOOL 3340 - Information Resources in the Life Sciences Credits: (2)~~

ZOOL 3470 - Zoogeography Credits: (3)

ZOOL 3500 - Conservation Biology Credits: (3)

ZOOL 3730 - Population Biology Credits: (3)

ZOOL 4050 - Comparative Vertebrate Anatomy Credits: (4)

ZOOL 4100 - Vertebrate Embryology Credits: (4)

ZOOL 4120 - Histology Credits: (4)

ZOOL 4210 - Advanced Human Physiology Credits: (4)

ZOOL 4220 - Endocrinology Credits: (4)

ZOOL 4250 - Radiation Biology Credits: (4)

ZOOL 4300 - Molecular Genetics Credits: (4)

ZOOL 4350 - Animal Behavior Credits: (4)

ZOOL 4470 - Wildlife Ecology and Management Credits: (4)

ZOOL 4480 - Aquatic Ecology Credits: (4)

ZOOL 4500 - Parasitology Credits: (4)

ZOOL 4600 - Protozoology Credits: (4)

ZOOL 4640 - Entomology Credits: (4)

ZOOL 4650 - Ichthyology Credits: (4)

ZOOL 4660 - Herpetology Credits: (4)

ZOOL 4670 - Ornithology Credits: (4)

ZOOL 4680 - Mammalogy Credits: (4)

~~ZOOL 4800 - Problems in Zoology Credits: (1-4) \*~~

~~ZOOL 4900 - Topics in Zoology Credits: (1-4)~~

~~ZOOL 4920 - Short Courses, Workshops, Institutes and Special Programs Credits: (1-4)~~

~~ZOOL 4950 - Field Zoology Credits: (1-3)~~

~~ZOOL 4970 - Thesis Credits: (2)~~

~~ZOOL 4980 - Research Design Credits: (2)~~

~~ZOOL 4990 - Seminar Credits: (1) \*\*~~

~~Note:~~

~~\* No more than 4 hours of ZOOL 4800 may count toward the major. Students enrolled in ZOOL 4800 must be engaged in active research with a faculty member.~~

~~\*\* ZOOL 4990 may count toward fulfilling the elective hours requirement only if it is additional to the 1 credit required for the major.~~

**Experience in Zoology: select a minimum of two credit hours\* from the following categories or select an additional (4th) course from the upper-division electives list (above)**

ZOOL 4800 - Problems in Zoology Credits: (1-4)

ZOOL 4830 - Readings in Zoology Credits: (1-4)

ZOOL 4890 - Cooperative Work Experience Credits: (1-4)

ZOOL 4900 - Topics in Zoology Credits: (1-4)\*\*

ZOOL 4920 - Short Courses, Workshops, Institutes and Special Programs Credits: (1-4)

ZOOL 4950 - Field Zoology Credits: (1-3)

ZOOL 4970 - Thesis Credits: (2)

ZOOL 4980 - Research Design Credits: (2)

Note:

\*The two credit hours need not be taken in the same semester.

\*\*Experience in zoology can include serving as a lab instructor. See department chair or professors that appoint lab instructors for information.

**Support Courses Required**

CHEM 1110 PS - Elementary Chemistry Credits: (5) and

CHEM 1120 - Elementary Organic Bio-Chemistry Credits: (5)

or

CHEM 1210 PS - Principles of Chemistry I Credits: (5) and

CHEM 1220 - Principles of Chemistry II Credits: (5) and

CHEM 2310 - Organic Chemistry I Credits: (4) and

CHEM 2315 - Organic Chemistry I Lab Credits: (1)

CHEM 2320 - Organic Chemistry II Credits: (4) and

CHEM 2325 - Organic Chemistry II Lab Credits: (1)

MATH 1050 QL - College Algebra Credits: (4) or

MATH 1080 QL - Pre-calculus Credits: (5) or

MATH 1210 - Calculus I Credits: (4)

PHYS 1010 PS - Elementary Physics Credits: (3)

or

PHYS 2010 PS - College Physics I Credits: (5) and

PHYS 2020 - College Physics II Credits: (5)

or

PHYS 2210 PS - Physics for Scientists and Engineers I Credits: (5) and

PHYS 2220 - Physics for Scientists and Engineers II Credits: (5)

Note:

CHEM 3070 may be taken instead of CHEM 2320.

Pre-medical professional students should take CHEM 1210/CHEM 1220 and CHEM 2310/CHEM 2320.

Students planning to attend graduate or professional schools are encouraged to take a class in the Calculus series (MATH 1210/MATH 1220). Pre-medical professional students are required to take one year of mathematics.

Pre-medical professional students should take PHYS 2010/PHYS 2020 with labs.

**Choose any two (2) Botany or Microbiology courses from the list below.**

Approval must be obtained from the Botany and Microbiology Department Chair before taking Botany and Microbiology courses numbered 3000 and above. Ecology-oriented students should take at least one Botany class, and Pre-medical professional students should take at least one Microbiology class.

BTNY 1203 LS - Plant Biology Credits: (3)

BTNY 2104 - Plant Form and Function Credits: (4)

BTNY 2114 - Evolutionary Survey of Plants Credits: (4)

BTNY 2303 - Ethnobotany Credits: (3)

BTNY 3105 - Anatomy and Morphology of Vascular Plants Credits: (5)

BTNY 3204 - Plant Physiology Credits: (4)

BTNY 3214 - Soils Credits: (4)

BTNY 3454 - Plant Ecology Credits: (4)

BTNY 3504 - Mycology Credits: (4)

BTNY 3514 - Algology Credits: (4)

BTNY 3523 - Marine Biology Credits: (3)

BTNY 3624 - Taxonomy of Vascular Plants Credits: (4)

BTNY 4113 - Plant Evolution Credits: (3)

MICR 2054 LS - Principles of Microbiology Credits: (4)

MICR 3053 - Microbiological Procedures Credits: (3)

MICR 3203 - The Immune System in Health & Disease Credits: (3)

MICR 3254 - Immunology Credits: (4)

MICR 3305 - Medical Microbiology Credits: (5)

MICR 3484 - Environmental Microbiology Credits: (4)

MICR 3502 - Environmental Health Credits: (2)

MICR 3853 - Food Microbiology Credits: (3)

MICR 4054 - Microbial Physiology Credits: (4)

MICR 4252 - Cell Culture Credits: (2)

MICR 4554 - Virology Credits: (4)

**Other Zoology Courses**

These do not count toward the major, but courses numbered 3000 or higher count as upper-division credits for the Bachelor of Science Degree.

ZOOL 2100 - Human Anatomy Credits: (4)

ZOOL 2200 - Human Physiology Credits: (4)

ZOOL 2800 - History of Life Sciences Credits: (3)

ZOOL 2900 - Topics in Zoology Credits: (1-4)

ZOOL 2920 - Short Courses, Workshops, Institutes and Special Programs Credits: (1-4)

ZOOL 3340 - Information Resources in the Life Sciences Credits: (2)

~~ZOOL 4830 - Readings in Zoology Credits: (1-4)~~

~~ZOOL 4890 - Cooperative Work Experience Credits: (1-4)~~

**INFORMATION PAGE**

Did this program change receive unanimous approval within the Department? \_**yes**\_\_ If not, what are the major concerns raised by the opponents?

Explain any effects this program change will have on program requirements or enrollments in other departments including the Bachelor of Integrated Studies Program. In the case of similar offerings or affected programs, **you should include letters from the departments in question stating their support or opposition to the proposed program**.

There should be no effects of this change on other departments. This proposed change simply modifies which courses can serve as upper-division electives and requires students to either take an additional course or take advantage of experiential-type courses, which many students already do.

Indicate the number of credit hoursfor course work within the program. (Do not include credit hours for General Education, Diversity, or other courses unless those courses fulfill requirements within the proposed program.)

Required zoology credits only (no support courses): 37 to 40 credits depending on which upper-division elective courses are taken (3- versus 4-hour courses)

Total BS (zoology and support courses): Between 60 and 85 depending on which alternative routes are taken (e.g., Chemistry, Physics) and whether elective and support courses taken are 3-, 4-, or 5-hour courses.

Indicate the number of credit hours for course work within the current program. (Do not include credit hours for General Education, Diversity, or other courses unless those courses fulfill requirements within the current program.)

Required zoology credits only (no support courses): 40 credits

Total BS (zoology and support courses): Between 63 and 85 depending on which alternative routes are taken with support courses (e.g., Botany, Chemistry, Math, Microbiology, Physics) and whether elective and support courses taken are 3-, 4-, or 5-hour courses.

**Graduate Programs only**: Describe any proposed changes in the instructional mode of delivery or course format that are program-wide in nature or that affect more than one-third of the course taught in the program (e. g. changing from in-class to online instruction). APPROVAL PAGE

for: **Zoology Bachelor of Science Degree** (Program Title) Date submitted online: **16 January 2015**

For new course proposals, excluding Experimental and Variable Title courses, the following must be completed by the Library bibliographer:

\_\_\_\_ The WSU Library has adequate information resources to support this proposal.

\_\_\_\_ Currently, the WSU Library does not have adequate information resources to support this course. However, if this proposal is approved, a Library bibliographer will work closely with departmental faculty to acquire the information resources needed. Funding for the new resources will come from the library’s budget.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ WSU Librarian/Date

**Approval Sequence**:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department Chair/Date (or BIS Director)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

College Curriculum Committee/Date (Signature not needed on Experimental or Variable Title courses.)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Career and Technical Education Director. (Needed on new or deleted courses required in a 2-year program.)

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Dean of College/Date

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| Courses required in programs leading to secondary undergraduate teacher certification must be approved by the University Council on Teacher Education before being submitted to the Curriculum Committee. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ University Council on Teacher Education/Date  |

|  |
| --- |
| Graduate course proposals must be reviewed by the University Graduate Council before being submitted to the Curriculum Committee. I have read the proposal and discussed it with the program director.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_University Graduate Council Representative/Date |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Effective Semester\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

University Curriculum Committee/Date

Passed by Faculty Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date