

FACULTY AGENDA ITEM 14.13

Date: February 24, 2014

Submitted by: Laura Stephenson, Interim Dean

SUBJECT: Biology Change B.S. Degree (Secondary Education) to B.S. Degree in Biology (Secondary Education Specialization)

Description: *The proposed degree change seeks to change the requirements and lower the number of credit hours for students seeking a B.S. in Biology in order to teach biology at the secondary education level. The proposed changes keeps the biology core requirements the same as that for the B.S. Biology degree (20 credit hours), but places restrictions on some biology electives to achieve a minimum of 18 credit hours of electives, which are required to meet the State of Kansas science standards. In practice, these do not actually function as "electives;" although, students have the option of several course substitutions for these electives. Therefore, the total biology credit hours for the modified degree will be a minimum of 38 instead of 52.*

Rationale: *These proposed changes to the B.S. degree lower the number of credit hours required in biology from 52 to 38, which therefore lower the total degree requirements from 154 to 140. While this is still 16 credit hours higher than most degrees on campus, this is a much more manageable set of degree requirements and is more competitive with our peer institutions. For comparison, the B.S. Biology degree for those not seeking teaching licensure requires 44 credit hours of biology. Though we are lowering the biology requirement by 6 credit hours, we are still well above the 30-hour major requirement for B.S. degrees at Washburn University. The courses for this proposed major change modified B.S. Biology degree have been selected to meet the Kansas standards for secondary biology education.*

Current Catalog Language:

REQUIREMENTS FOR MAJORS

All majors must take a 23-hour core consisting of:

- BI 102 General Cellular Biology (5)
- BI 105 Botany (4)
- BI 110 Zoology (4)
- BI 301 General Microbiology (4)
- BI 333 General Genetics (4)
- BI 390 Biology Seminar (1) – Capstone Course
- BI 395 Biology Research (1) – Capstone Course

The Bachelor of Science (BS) degree in Biology requires a minimum of 44 hours in Biology: the 23-hour BI core and 21 additional BI hours; 18 of these 21 hours must be upper division BI courses. The BS degree also requires a 30-hour minor to be chosen from the Natural Sciences (Biology, Chemistry, Mathematics & Statistics, or Computer Information Science). This minor must be in departments other than the major, and must have at least 20 hours in one department. Minors for the BS degree are limited to these courses: Chemistry 151 or above, Physics 261 or above, Mathematics 116 or above, Computer Science 110 or above.

The following non-biology courses are required of all majors:

MA 140 or MA 142 or MA 151

One year of physics with lab (PS 261/PS 262 or PS 281/PS 282)

One year of general chemistry with lab (CH 151/CH 152)

One semester of organic chemistry with lab (CH 340/CH 342)

All Biology Majors must be officially declared before taking upper division courses; however, it is recommended that the major be declared as early as possible after matriculation in order to be eligible for Biology scholarships, and to be assigned an appropriate advisor. Non-Biology majors must be officially declared in an appropriate major before taking upper division BI courses. Students may declare a major online through the Academic Success tab in MyWashburn. Each semester all majors must meet with a department advisor to plan the appropriate course work for the next semester.

Proposed Catalog Language:

The Bachelor of Science (B.S.) degree in Biology with Secondary Education Specialization (BiEd) requires a minimum of 38 hours: the 20-hour core and at least 18 required supporting courses as listed below:

BiEd majors must take a 20-hour core consisting of:

BI 102 General Cellular Biology (5)

BI 103 General Organismal Biology (5)

BI 301 General Microbiology (4)

BI 333 General Genetics (4)

BI 390 Biology Seminar (1) - Capstone Course

BI 395 Biology Research (1) - Capstone Course

Required Supporting Courses for BiEd Majors (at least 18 BI hours):

Students must complete the following courses to satisfy Kansas Teaching Standards. Indicated courses may be substituted by course listed under Course Substitutions.

BI 155 Sexually Transmitted Diseases (1)

BI 202 Biology of Behavior (3)

BI 250 Intro Human Anatomy (3)

BI 255 Human Physiology (4)

BI 310 Ecology (4)

BI 340 Evolutionary Biology (3)

Course Substitutions

BI 275 Human Anatomy [substitute for BI 250] (4)

BI 325 Microbiology of Human Disease [substitute for BI 155] (5)

BI 300 Field Biology [substitute for BI 310] (3)

BI 330 Animal Physiology [substitute for BI 255] (4)

The following non-biology courses are required of BiEd majors:

- **MA 140 or MA 151**
- **One year of physics with lab (PS 261/PS 262 or PS 281/PS 282)**
- **One year of general chemistry with lab (CH 151/CH 152)**

- **One semester of organic chemistry with lab (CH 340/CH 342)**

The B.S. degree also requires a 30-hour minor to be chosen from the Natural Sciences (Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, or Computer Information Science). This minor must be in departments other than the major, and must have at least 20 hours in one department. Minors for the B.S. degree are limited to these courses: Chemistry 151 or above, Physics 261 or above, Mathematics 116 or above, Computer Science 110 or above.

To receive departmental approval as having competency for licensure in teaching biology at the secondary level, **majors must complete a B.S. in BiEd as outlined above. Completion of the 20-hour core, other major requirements, and appropriate course work within the Department of Education in science teaching methods will satisfy the State competency requirements for licensure in biology. See the Department of Biology and the Department of Education for details. The number of credit hours to graduate varies, but is at least 140 credit hours.**

Students seeking licensure to teach biology must be formally admitted to the University's Professional Teacher Education Programs. For admission requirements, see EDUCATION in this catalog.

Financial Implications: *None*

Proposed Effective Date: *Fall 2014.*

Request for Action: *Approval by AAC/.FAC/FS/ Gen Fac, etc*

Approved by: *AAC on **3-10-14***

FAC on date

Faculty Senate on date

Attachments Yes No X