**PROGRAM CHANGES**

 WEBER STATE UNIVERSITY

**Submission Date: November 14, 2014**

**Submitter Name: Karen Nakaoka, Ph.D.**

**College: Science**

**Department**: Microbiology

**Program Title:** Microbiology

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) \_\_\_addition of a course as a Microbiology elective \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**JUSTIFICATION:** We propose that there be a program change to allow approval of the **Microbiology and Global Public Health** course (Micr 3012) as an elective toward the requirements for the Microbiology major. The University Curriculum Committee approved this course on November 12, 2014. The American Society for Microbiology recommends that public health be included as an elective option for undergraduate Microbiology majors. Currently, we offer a lower-division, general education course in Public Health (Micr 1153) that does not count as Microbiology elective credit and is not recommended for our majors. We also offer Environmental Health (Micr 3502), for students interested in careers in public health. Micr 3502 is an upper-division microbiology elective with an emphasis on local public health departments and infrastructure (e.g. waste water treatment facilities), but not on global public health issues. Students could take both Micr 3502 and Micr 3012 for a well-rounded experience with public health issues and interventions. This course will also be applicable to students interested in medicine and health care.

The format of Microbiology and Global Public Health will include active learning activities, such as group learning exercises, problem solving and case studies. Using these methods, this new course will reinforce several of our Microbiology Learning Outcomes, including improving the students’ skills of communication, critical thinking, problem solving and social responsibilities as well as providing in depth understanding of disease prevention. The latter are areas that need expansion in our course offerings.

Microbiology and Global Public Health will be offered as a two-credit, non-laboratory, course. Microbiology majors sometimes have difficulty fitting in all of their 20 hours of electives due to scheduling conflicts or work schedules. Since there are few two credit hour options in our curriculum, and few elective courses without a lab, Micr 3012 could allow some flexibility for the students. We have taught this course experimentally once and will teach it again Spring 2015. It was enthusiastically supported by student enrollments and had excellent course and instructor evaluations. The University Curriculum Committee approved it as a course on November 12, 2014.

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.

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| **Microbiology Major*** **Program Prerequisite:** Not required.
* **Minor:**Not required.
* **Grade Requirements:** An overall GPA of 2.00 or higher in microbiology courses required for this major in addition to an overall GPA of 2.00 or higher.
* **Credit Hour Requirements:** A total of 120 credit hours is required for graduation; a minimum of 71 of these is required within the major. A total of 40 upper division credit hours is required (courses numbered 3000 and above).

**Advisement**All Microbiology students are encouraged to meet with a faculty advisor at least annually for course and program advisement. Call 801-626-6949 for more information or to schedule an appointment.  (Also refer to the [Department Advisor Referral List](http://weber.edu/ssc/academicadvisors.html).)**Admissions Requirements**Declare your program of study (see [Enrollment Services and Information](http://catalog.weber.edu/content.php?catoid=7&navoid=1243#Program_of_Study__Major_Minor__Declaration)). No special admission or application requirements are needed for this program.**General Education**Refer to [Degree and General Education Requirements](http://catalog.weber.edu/content.php?catoid=7&navoid=1244#Requirements_for_Bachelor_s_Degrees) for Bachelor of Science requirements. The following courses required for the Microbiology major also will satisfy general education requirements: [MICR 2054](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt6002), [CHEM 1210](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt6492), [PHYS 1010](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2434) or [PHYS 2010](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt7084).**Major Course Requirements for BS Degree****Microbiology Courses Required (19 credit hours)*** [MICR 2054 LS - Principles of Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [MICR 3053 - Microbiological Procedures](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(3)**

* [MICR 3154 - Microbial Ecology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [MICR 4054 - Microbial Physiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**

* [MICR 4154 - Microbial Genetics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**

**Microbiology Elective Courses (20 credit hours)****Category A (8 credit hours minimum)*** Micr 3012 – Microbiology and Global Public Health **Credits:** (2)
* [MICR 3254 - Immunology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [MICR 3305 - Medical Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)**
* [MICR 3403 - Tropical Diseases](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(3)**
* [MICR 3484 - Environmental Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [MICR 3502 - Environmental Health](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(2)**
* [MICR 3753 - Geomicrobiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(3)**
* [MICR 3853 - Food Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(3)**
* [MICR 4252 - Cell Culture](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(2)**
* [MICR 4354 - Industrial Microbiology and Biotechnology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**

* [MICR 4554 - Virology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**

**Category B*** [MICR 2600 - Laboratory Safety](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1)** or
* [CHEM 2600 - Laboratory Safety](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1)**
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* [MICR 2920 - Short Courses, Workshop, Institutes and Special Programs](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1-3)** (1 credit hour required)
* [MICR 4800 - Directed Research](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1-2)** \*
* [MICR 4830 - Directed Readings](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1-2)** \*
* [MICR 4920 - Short Courses, Workshops, Institutes and Special Programs](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1-3)** (1 credit hour required)

* [MICR 4991 - Microbiology Seminar](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1)**

**Note:***No more than 3 credit hours of*[*MICR 4800*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt1511)*and no more than 2 credit hours of*[*MICR 4830*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt9928)*may count toward the major.***Category C (8 credit hours maximum)***elective courses in other life science departments** [BTNY 3504 - Mycology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [BTNY 3514 - Algology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [ZOOL 3200 - Cell Biology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
* [ZOOL 3300 - Genetics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**

* [BTNY 3303 - Plant Genetics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(3)**

**Required Support Classes (32-35 credit hours)***A grade of D- or better is required in each support course.** [CHEM 1210 PS - Principles of Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)** and
* [CHEM 1220 - Principles of Chemistry II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)**
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* [CHEM 2310 - Organic Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)** and
* [CHEM 2315 - Organic Chemistry I Lab](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(1)**
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* [CHEM 3070 - Biochemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
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* [MATH 1050 QL - College Algebra](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)** or
* [MATH 1080 QL - Pre-calculus](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)** or
* [MATH 1210 - Calculus I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(4)**
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* [PHYS 1010 PS - Elementary Physics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(3)** or
* [PHYS 2010 PS - College Physics I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)** or
* [PHYS 2020 - College Physics II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)** or
* [PHYS 2210 PS - Physics for Scientists and Engineers I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)** or
* [PHYS 2220 - Physics for Scientists and Engineers II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228) **Credits:** **(5)**
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* Life Science Course Electives **(6)** \*

**Note:***\* Minimum of 6 credit hours from two Life Science courses in:*[*BTNY 1203*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2337)*,*[*BTNY 2104*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt5987)*,*[*BTNY 2114*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt8264)*,*[*BTNY 3105*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt5346)*,*[*BTNY 3204*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt769)*,*[*BTNY 3214*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt614)*,*[*BTNY 3454*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt7710)*,*[*BTNY 3473*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2655)*,*[*BTNY 3523*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2570)*,*[*BTNY 3624*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt5117)*;*[*ZOOL 1010*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt5050)*,*[*ZOOL 1110*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2702)*,*[*ZOOL 2100*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2643)*,*[*ZOOL 2200*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2302)*,*[*ZOOL 3450*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt5850)*,*[*ZOOL 3470*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2178)*,*[*ZOOL 3500*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt1456)*,*[*ZOOL 3720*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt7550)*,*[*ZOOL 3730*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2207)*,*[*ZOOL 4050*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt3841)*,*[*ZOOL 4100*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt8529)*,*[*ZOOL 4120*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt9048)*,*[*ZOOL 4210*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt9848)*,*[*ZOOL 4220*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt4036)*,*[*ZOOL 4250*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt5471)*,*[*ZOOL 4300*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2510)*,*[*ZOOL 4470*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt1585)*,*[*ZOOL 4480*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt7836)*,*[*ZOOL 4490*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt3928)*,*[*ZOOL 4500*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt4884)*,*[*ZOOL 4600*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt8070)*,*[*ZOOL 4640*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt7613)*,*[*ZOOL 4650*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt2203)*,*[*ZOOL 4660*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt3323)*,*[*ZOOL 4670*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt3076)*,*[*ZOOL 4680*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2874&returnto=1228#tt9350)*.***Microbiology Special Emphases**Microbiology majors pursuing careers in Biotechnology, Industrial Microbiology, Public Health, Pre-Medical, Pre-Dental or Pre-Physician Assistant should consult appropriate advisors and complete the courses for one of the following emphasis areas: [Biotechnology or Industrial Microbiology Emphasis, Microbiology (BS)](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2717), [Public Health Emphasis, Microbiology (BS)](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2723),[Pre-Medical, Pre-Dental, and Pre-Physician Assistant Emphasis, Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2725).  Students interested in Graduate School should discuss their plans with the major advisor. |

 Return to: [Programs Sorted by Degree](http://catalog.weber.edu/content.php?catoid=7&navoid=1228)

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.

**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.**

We do not foresee any impact this would have on other departments.

**Indicate the number of credit hours for 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.)**

For Microbiology majors:

19 required credit hours from our core Microbiology courses

20 hours of credit hours from electives from Microbiology courses (or related Zoology or Botany courses)

32-35 credit hours of support courses required

**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.) \_\_\_\_**

The current program requires the same credit hours as noted above.

**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).

for: Microbiology (Program Title) Date submitted online \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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.)

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

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  |

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| 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