Course Name: Microbiology and Global Public Health
Course Prefix: Micr
Course Number: 3012
Submitted by: Karen Nakaoka, knakaoka@weber.edu

Current Date: 10/21/2014 College: Science
Department: Microbiology
From Term: Spring 2015

Substantive

new
Current Course Subject: N/A
Current Course Number:

**New/Revised Course Information:**

Subject: MICR
Course Number: 3012

Check all that apply:*This is for courses already approved for gen ed. Use a*[*different form*](http://documents.weber.edu/catalog/forms.htm)*for proposing a new gen ed designation.*

* DV
* CA
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* AI
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* TA
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Course Title: Microbiology and Global Public Health
Abbreviated Course Title: Micr & Global Public Health
Course Type: LEC
Credit Hours: 2
**or**if variable hours: to

Contact Hours:Lecture: 2
Lab:
Other:

Repeat Information:Limit: 0
Max Hrs: 0
Grading Mode: standard

This course is/will be:

a required course in a major program
a required course in a minor program
a required course in a 1- or 2- year program
elective

Prerequisites/Co-requisites:Micr 1153, Micr 1113, Micr 2054 or equivalent

Course description (exactly as it will appear in the catalog, including prerequisites):Microbiology and Global Public Health: This course focuses on microbial diseases that are major causes of morbidity and mortality worldwide (e.g. HIV, tuberculosis, malaria, influenza etc.), diseases that are classified as emerging diseases (e.g. Ebola) and diseases that are being eliminated or eradicated, including certain Neglected Tropical Diseases. This course will analyze the pathogenesis, life cycles, epidemiology and societal impacts of these diseases, while emphasizing preventative interventions such as vaccinations, water and sewage treatment, and elimination and eradication strategies. The role of various agencies (e.g. WHO and CDC) in improving global health will also be discussed. Prerequisites: Micr 1113, Micr 1153 or Micr 2054 or permission of the instructor. (Two one hour lectures per week)

Justification for the new course or for changes to an existing course. (Note: Justification should emphasize academic rationale for the change or new course. This is particularly important for courses requesting upper-division status.)The proposed course (Micr 3012) focuses on issues related to disease control in a global setting, especially within the developing world. However, this course will also underscore that fact that these diseases of the developing world do impact the developed world (e.g. 2014 Ebola outbreak). In addition, the American Society for Microbiology recommends a Public Health Course as an elective for Microbiology majors. In fact, this course is even more important to Weber State students since some of them are interested in careers in medicine and public health, and as such an upper division course in Public Health would be beneficial. Although our department offers a General Education Public Health Course (Micr 1153), this does not count as Microbiology elective credit nor is it recommended for our majors. Instead, Micr 1153 focuses on the General Education Outcomes for the Life Sciences and deals proportionately less with disease control than the newly proposed course.

We are justified in offering this course as an upper division course since the issues involved in control of microbial diseases require more in depth and interdisciplinary knowledge of microorganisms than our general education courses provide. For that reason, we will require that students take an introductory type microbiology course (Micr 1113LS, 1153LS, or 2054LS) or seek permission of the instructor. However, students of any major, are encouraged to take Micr 3012, since their background in other areas may add insight into issues that impact disease control such as social, political and economic complexities. Likewise, these other majors will help the Microbiology majors realize that, while there may be a scientific solution to the control of a disease, application of that solution without considering these other facets may result in failure to control the problem.

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.

We propose this new course as an elective that can be used to help fulfill the Microbiology major’s degree requirements. It will be offered as a two credit hour course. Many of our Microbiology majors at times have difficulty fitting in all of their 20 hours of electives due to schedule conflicts etc. 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, possibly allowing them to graduate more quickly. 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.

**INFORMATION PAGE
for substantive proposals only**

1. Did this course receive unanimous approval within the Department?trueIf not, what are the major concerns raised by the opponents?

2. If this is a new course proposal, could you achieve the desired results by revising an existing course within your department or by requiring an existing course in another department?The topics in this new course cannot be adequately covered by altering any course in our department or in another department. For example, even though Public Health (Micr 1153) covers certain aspects of the new course, a large portion of Micr 1153 is dedicated to teaching the General Education Learning Outcomes for the Life Science and as a consequence proportionately less time is devoted to in-depth explanations of disease control strategies. In contrast, the course Microbiology 3012 will endeavor to provide a deeper understanding of control strategies of certain microbial diseases, requiring integration of several disciplines, including microbiology, epidemiology, immunology, and sociological considerations.

Some topics of the new course do overlap with those covered in Medical Microbiology (Micr 3305) and Tropical Diseases (Micr 3403) (e.g. malaria, HIV, onchocerciasis, etc.). However, the new course will focus on interdisciplinary methods to control these microbial diseases as noted in the above paragraph. Medical Microbiology and Tropical Diseases focuses on pathogenesis, disease course, diagnosis, etc. The Microbiology and Global Public Health course focuses on epidemiology, transmission, treatment, control, prevention, and social, economic and political issues that impact disease control. Dr. Fritzler who teaches these two classes has included a letter of support noting that there is minimal overlap with his courses (Micr 3305 and Micr 3403).

Another course in our department where there may be overlap is Environmental Health (Micr 3502). According to the syllabus, this class does cover some aspects of disease control, especially wastewater and water treatment, but the topics are significantly different otherwise. Micr 3502 focuses on local, not global, health issues, laws, and interventions, and thus has a significantly different emphasis than our proposed course.

3. How will the proposed course differ from similar offerings by other departments? Comment on any subject overlap between this course and topics generally taught by other departments, even if no similar courses are currently offered by the other departments. Explain any effects that this proposal will have on program requirements or enrollments in other department. Please forward letters (email communication is sufficient) from all departments that you have identified above stating their support or opposition to the proposed course.To our knowledge, there are no courses in other departments that are similar to this one.

4. Is this course required for certification/accreditation of a program? no

If so, a statement to that effect should appear in the justification and supporting documents should accompany this form.

5. For course proposals, e-mail a syllabus to Faculty Senate which should be sufficiently detailed that the committees can determine that the course is at the appropriate level and matches the description. There should be an indication of the amount and type of outside activity required in the course (projects, research papers, homework, etc.).

Please mail a signed [approval page](https://portalapps.weber.edu/lcourseproposal/SignaturePage.PDF) to the Faculty Senate Office, MA 210J, MC 1033.