WIU MICROBIOLOGY PROGRAM

SYLLABUS  MICROBIAL ECOLOGY (MICR 451)  FALL 2013

Instructor: Dr. S.M. Holt, Ph.D., Office Phone: 298-1484; E-mail: sm-holt@wiu.edu
Office & Hours: Waggoner Hall, RM 268, Office Hrs: M & W, @ 4:25-5:15; T @ 3:50-5:30, or by appt.
Text Book: Brock: Biology of Microorganisms, 13th ed, ©2012 (recommended but not required)

Course Meeting: Lecture, MW 1-1:50, RM 202; Lab, T @ 10:00-11:50 OR 2-3:50, RM 267

Date & Day  Topic  Brock 13th ed
8/19  M  Course Introduction-Microbial Evolution & Systematics  446-474
8/21  W  Microbial Evolution & Systematics  446-474
8/26  M  Microbial Evolution & Systematics  446-474
8/28  W  Methods in Microbial Ecology (Culture-Dependent Analyses)  643-658
9/2  M  NO CLASS-----LABOR DAY HOLIDAY
9/4  W  Methods in Microbial Ecology (Culture-Dependent Analyses)  643-658
9/9  M  Methods in Microbial Ecology (Culture-Independent Analyses)  643-658
9/11  W  Methods in Microbial Ecology (Culture-Independent Analyses)  643-658
9/16  M  LECTURE EXAM I
9/18  W  Microbial Ecosystems: Structure, Microenvironment, & Biofilms  670-677
9/23  M  Microbial Ecosystems: Soil, Freshwater, Marine Habitats  678-693
9/25  W  Microbial Ecosystems: Soil, Freshwater, Marine Habitats  678-693
9/30  M  Extreme Environments & Microbial Adaptations  132-147, 690-5
10/2  W  Extreme Environments & Microbial Adaptations  132-147, 690-5
10/7  M  Biogeochemical Cycling: Carbon  699-702
10/9  W  Biogeochemical Cycling: Carbon  699-702
10/14  M  LECTURE EXAM II
10/16  W  Biogeochemical Cycling: Nitrogen  703-704
10/21  M  Biogeochemical Cycling: Sulfur  705-706
10/23  W  Animal-Microbial Symbioses  732-741
10/28  M  Animal-Microbial Symbioses  732-741
10/30  W  Plant-Microbial Symbioses  723-731
11/4  M  Plant-Microbial Symbioses & Microbe-Microbe Interactions  721-723
11/6  W  LECTURE EXAM III
11/11  M  Treatment of Drinking Water & Indicators of Contamination  1005-1011
11/13  W  Treatment of Raw Sewage  1005-1011
11/18  M  Treatment of Raw Sewage  1005-1011
11/20  W  Biodegradation of Xenobiotics & Biomagnification  711-717
11/25  M  NO CLASS--------FALL VACATION
11/27  W  NO CLASS--------FALL VACATION
12/2  M  Bioremediation---Biostimulation & Bioaugmentation
12/4  W  Ecological Control of Insects
12/11  M  Final Exam (IV) Wednesday @ 1:00 PM, WG RM 202

American Society for Microbiology  http://www.asm.org

The American Society for Microbiology is the oldest and largest single biological sciences membership organization in the world with >40,000 members including students. ASM “promotes the microbiological sciences and their application for the common good.”
**Course Description & Objective.** Ecobiology of the major microbial groups and their role in processing carbonaceous and geochemical elements in aquatic and terrestrial environments. Writing Instruction in the Discipline (WID) course. Microbial Ecology examines the interrelationships of microorganisms and their environment. Microbial activities in natural or artificial environments have many social & economic implications that directly affect the global environment and consequently impact all life forms including humans. Students will understand & appreciate the tremendous impact of microorganisms on the global environment and humans.

**Course Prerequisites.** BOT 200 (C grade or better), MICR 200 (C grade or better), ZOOL 200 (C grade or better); ENG 280. Chemistry is highly recommended.

**Syllabus Schedule.** Syllabus schedule is tentative & can change at the discretion of the instructor.

**Grading Policies.** The final grade for the course is a combination of the lecture points and lab points accumulated during the entire semester. Lecture accounts for ~65% of the final points and the lab accounts for ~35% of the final course points. An itemized list of graded items and grading scales for undergraduate and graduate students are listed in tables 1, 2, and 3. Undergraduate and graduate students have different grading scales. Exam/Quiz format will be discussed as the test date approaches. There are a total of four exams including the final exam. The grade point range listed in table 2 (undergraduate) and table 3 (graduate students) will be used to assign final grades. Grading scale will not be curved or adjusted and no extra credit is offered. Graded exams will be reviewed during the lab session but will be returned to the instructor before leaving the lab. Students who remove the graded exams or exam key from the lab session will be given a zero for that exam.

This course is listed as a WID (Writing in the Disciplines) course. There will be four assignments involving a writing component as outlined in the WID Guidelines. The writing assignments typically will be embedded within some of the lab exercises, worksheets, or other projects.

**Attendance Policy:** A portion of your final grade will be based on attendance to the laboratory. Course points will not be deducted if you miss a lecture (M & W 1-1:50). It is **your** responsibility, however, to obtain lecture material and handouts from classmates if you miss lecture for any reason. For example, if you are an athlete and will miss lectures, you must make arrangements with a classmate to obtain the complete notes. The instructor will not distribute lecture notes or handouts to students who miss lecture. Complete notes will not be posted on a web site. Only lecture outlines may be posted online.

Please be courteous if you arrive late to class. Enter the classroom quietly and take the nearest seat to the side of the instructor without disruption. It is not courteous to walk in front of or behind the instructor while class is in session. Failure to follow this policy will result in deduction of course points.

**Regarding lab attendance,** one unexcused absence from lab will result in a **loss of 20 points** and the daily lab assignment points (either quiz, worksheet, or report or all mentioned). Students with an unexcused absence cannot make up missed lab points. Two unexcused absences from lab will result in an automatic F for the entire course. Three excused absences or one unexcused and two excused from lab will result in an automatic F for the entire course. Tardiness to lab (<10 min) is considered an excused
absence, but more than 10 min late is considered an unexcused absence. Lab quizzes are given the first 10 min of lab only.

Student with an excused absence can take the missed lab quiz and complete any lab worksheet items to obtain points. A make-up lab quiz will be taken the lab period following the excused lab absence only. The student must be prepared to take the lab quiz lab period following the excused absence. It is the student’s responsibility to obtain lab quiz material. The student must provide documentation for excused absence. **No make-up labs will be given.** The instructor will determine if an absence is considered excused or unexcused and will be posted online. Allowable excused absences are illness, death in family, sponsored university event with which your involved (athlete, club), military obligation, or emergency responder obligation. Excused absence requires documentation. If you are going to be absent from lab the student must contact the instructor **prior to the test, quiz, or lab date.**

**Academic Integrity.** The penalty for cheating on any assignment will result in an automatic F for the entire course and will be referred to the WIU Student Judicial Program.

**Course Management Software.** Aspects of Microbial Ecology MICR 451G will be managed by Western Online (D2L). Course Information and Syllabus, Lecture Outlines, Grades, and Lab Attendance Record will be posted on D2L. Students must print the Lecture Outlines for each topic and bring them to class. Students must possess an ECOM account username and password for access to Western Online.

**Cell Phone & Electronic Devices Policy & Course Disruption Policy** Cell phone usage, text messaging, voice recording, and digital imaging are prohibited in this course during lecture and lab. Cell phones must be turned off (including silent mode) and cell phones must be kept out of sight while in lecture and lab. Cell phones are a distraction during lecture and pose a safety threat during lab exercises. Only EMTs, WIU First Responders, or other designated emergency personnel are allowed to have an electronic devise on or activated during course hours. Laptop computers are allowed only for note-taking but should not pose a distraction. Failure to follow the electronic devices policy will result in loss of course points (10 pts / violation) and confiscation of the electronic device, and / or eviction from the class meeting or course as determined appropriate by the instructor. In addition to electronic devices, any behavior determined to be a distraction or disruption to the course will result in loss of course points (10 pts / violation) and / or eviction from the class meeting or course as determined appropriate by the instructor. The course starts promptly at 1:00 PM. If any class period cannot start on time at 1:00 PM due to excessive noise or talking, or other disruption, then there will be a 5 point penalty for everybody enrolled in the course for each offense.

**Americans With Disabilities Act.** In accordance with University policy and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. For the instructor to provide the proper accommodation(s) you must obtain documentation of the need for an accommodation through Disability Resource Center (DRC) and provide it to the instructor. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he/she is not legally permitted to inquire about such particular needs of students. Students who may require special assistance in emergency evacuations (i.e. fire, tornado, etc.) should contact the instructor as to the most appropriate procedures to follow in such an emergency. Contact Disability Resource Center (DRC) at 298-2512 for additional services.

**Computer Software.** Data from Lab exercises will be analyzed using Microsoft Excel Software. Please familiarize yourself with basic computer usage and with basics of using Microsoft Excel Software. The instructor will provide basic instruction on using Microsoft Excel Software for graphing fermentation data but it helps if students have basic computer usage knowledge including the software mentioned.
Departmental Plagiarism Policy. The faculty of the Department of Biological Sciences define plagiarism as expressed by V. E. McMillan in Writing Papers in the Biological Sciences (Bedford/St.Martin's Press, New York, pg 16) “Plagiarism is the theft of someone else’s words, work, or ideas. It includes such acts as (1) turning in a friend’s paper and saying it is yours; (2) using another person’s data or ideas without acknowledgement; (3) copying an author’s exact words and putting them in your paper without quotation marks; and (4) using wording that is very similar to that of the original source but passing it off as entirely your own even while acknowledging the source.” V.E. McMillan in Writing Papers in the Biological Sciences (Bedford/St. Martin’s Press, New York, p16)

This includes information in textbooks or laboratory manuals, theses, all writing assignments and images. The faculty of the department attempt to monitor students writing assignments (essay exams, papers, lab reports, and other writing assignments or exercises) for incidents of plagiarism. If plagiarism is found, the faculty will discuss the situation with the student and indicate to the student the penalty for this academic dishonesty. Potential penalties include those cited on the academic dishonesty section of the WIU web page.

Final Exam Policy. I follow the university policy on final exams found at http://www.wiu.edu/policies/finexam.php. The policy states “Any student having more than three scheduled exams on one day is entitled to rescheduling. The student should contact the instructor of the course having the smallest enrollment and that instructor must allow a rescheduling of the examination”. To reschedule the final exam, the student must provide evidence of four finals on the same day and that Microbial Ecology has the smallest enrollment of the four. Final exam dates will not be rescheduled for any other reason. The final exam date is considered a regularly scheduled meeting time for the course. If you cannot attend the final exam period due to a previously scheduled event, then drop the course.

Laboratory Safety Policy. Laboratory safety policies will be discussed during the first laboratory session. Each student will sign the laboratory safety policy stating that the instructor has reviewed the material and the student understands the policies. A student cannot attend any laboratory session until the laboratory safety policy is signed. Failure to follow the safety policies will result in a loss of course points (10 pts / violation) and / or eviction from the class meeting or course as determined appropriate by the instructor.

Department of Biological Sciences & University Policies
Department of Biological Sciences Policies. http://www.wiu.edu/biology/student/policies.php
Student’s Rights and Responsibilities. http://www.wiu.edu/provost/students/
Student Academic Integrity Policy. http://www.wiu.edu/policies/acintegrity.php

Final Course Statement. By taking this course you the student agree to abide by any and all policies designated for the specific course of Microbial Ecology, the Department of Biological Sciences, and Western Illinois University.
Table 1. Graded Items, Points Per Item, and Totals for Graduate Students & Undergraduate Students

<table>
<thead>
<tr>
<th>Graded Item</th>
<th>Number Items x Points for Each Item =</th>
<th>Total Points for Each Graded Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exam</td>
<td>4 x 75 pts each =</td>
<td>300</td>
</tr>
<tr>
<td>Lab Quiz</td>
<td>10 x 8.0 pts each =</td>
<td>80</td>
</tr>
<tr>
<td>Lab Worksheet</td>
<td>10 x 8.0 pts each =</td>
<td>80</td>
</tr>
<tr>
<td>Phylogenetics Project</td>
<td>1 x 5 pts =</td>
<td>5</td>
</tr>
<tr>
<td>Total Points</td>
<td></td>
<td>465</td>
</tr>
</tbody>
</table>

Table 2. Undergraduate Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Point Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≥428</td>
</tr>
<tr>
<td>A-</td>
<td>419-427</td>
</tr>
<tr>
<td>B+</td>
<td>403-418</td>
</tr>
<tr>
<td>B</td>
<td>387-402</td>
</tr>
<tr>
<td>B-</td>
<td>372-386</td>
</tr>
<tr>
<td>C+</td>
<td>356-371</td>
</tr>
<tr>
<td>C</td>
<td>341-355</td>
</tr>
<tr>
<td>C-</td>
<td>325-340</td>
</tr>
<tr>
<td>D+</td>
<td>310-324</td>
</tr>
<tr>
<td>D</td>
<td>294-309</td>
</tr>
<tr>
<td>D-</td>
<td>279-293</td>
</tr>
<tr>
<td>F</td>
<td>≤278</td>
</tr>
</tbody>
</table>

Table 3. Graduate Student Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Point Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≥428</td>
</tr>
<tr>
<td>B</td>
<td>381-427</td>
</tr>
<tr>
<td>C</td>
<td>335-380</td>
</tr>
<tr>
<td>D</td>
<td>288-334</td>
</tr>
<tr>
<td>F</td>
<td>≤287</td>
</tr>
</tbody>
</table>