BIOL 4620- Applied and Environmental Microbiology
Course Syllabus- Spring 2013

Individuals with disabilities who need to request accommodations should contact the Disability Services Coordinator, Student Center 255, 678-466-5445, disabilityservices@clayton.edu

Course Description:

Number and Title:

BIOL 4620 (CRN 26563)
Applied and Environmental Microbiology

Credit Hours:

3.0 Semester credit hours (3-0-3)

Catalog Description:

This course is designed to expose students to the importance of microorganisms in industrial processes and in the environment. The course will also focus on the applications of microorganisms to solve environmental problems and public health aspects of environmental microbiology.

Course prerequisite and co-requisite:

Prerequisite: BIOL 3250 and BIOL 3250L
Computer Requirement:

- Each CSU student is required to have ready access throughout the semester to a notebook computer that meets faculty-approved hardware and software requirements for the student's academic program. Students will sign a statement attesting to such access. For further information on CCSU's Official Notebook Computer Policy, please go to http://www.clayton.edu/hub/itpchoice/notebookcomputerpolicy.

Computer Skill Prerequisites:

- Able to use the Windows™ operating system
- Able to use Microsoft Word™
- Able to send and receive e-mail from their CSU mail account.
- Able to attach and retrieve attached files via email
- Able to use Microsoft Excel
- Able to use a Web browser.
- Able to use the student tutorial CD that accompanies the text.

In-class Use of Student Notebook Computers:

- Student notebook computers WILL be used periodically this course and the student will be expected to use their notebook computer to complete classroom assignments and to communicate with the instructor via email. You are expected to check your email daily. This will be a means in which the instructor communicates with you about course assignments.

Desire to Learn (Online Classroom):

- Most course content (PowerPoints, Quizzes, assignments, reviews, etc.) will be posted to Desire to Learn. You should plan to log in daily!
- You can gain access to D2L, by signing on to the SWAN portal and selecting the “Georgia View” icon on the top right side. If you experience any difficulties in D2L, please email or call The HUB at TheHub@mail.clayton.edu or (678) 466-HELP. You will need to provide the date and time of the problem, your username, the name of the course that you are attempting to access, and your instructor’s name.

Online videos and tutorials are available to students at www.clayton.edu/hub/d2l
Software Requirement:

- In addition to the MS Office Suite available free from the Hub, you will need Adobe Reader or Adobe Professional to access PDF files for this course. Adobe Reader is available for free: [http://get.adobe.com/reader](http://get.adobe.com/reader)

Student and Instructor Responsibilities:

We are in this together, guys. We **both** have many responsibilities related to this course. I have listed my expectations of you below and have listed expectations of a good instructor (which I hope to be) below as well. Let’s make certain that we BOTH remember our responsibilities. I will let you know (in private) if you are not meeting my expectations if you agree to meet with me (in private) to let me know if I am not meeting yours.

<table>
<thead>
<tr>
<th><strong>Student Responsibilities</strong></th>
<th><strong>Responsibilities of a Good Instructor</strong></th>
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<tbody>
<tr>
<td>Take NOTES from reading material AND from lecture material. Don’t just download the PowerPoints and call it a day.</td>
<td>Act professionally and never ever humiliate a student!</td>
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<tr>
<td>Turn in assignments on time and take quizzes on time.</td>
<td>Maintain a learning environment that allows students to participate, be engaged in the material, and ask questions when appropriate.</td>
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<tr>
<td>Read your assigned reading on time.</td>
<td>Provide feedback to students on their success and provide feedback to students when they are not successful or not adhering to their responsibilities.</td>
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<tr>
<td>Come to class on time and ready to learn.</td>
<td>Make deadlines CLEAR in GAVIEW.</td>
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<tr>
<td>Respect others around you by not being distracting (social media, cell phones, talking in class, etc.).</td>
<td>Listen with an open mind! Everyone makes mistakes so evaluate any error a student feels you made. Correct errors you make.</td>
</tr>
<tr>
<td>Communicate professionally and respectfully to the instructor and/or to other students with whom you are working.</td>
<td>Offer help and resources when a student asks.</td>
</tr>
<tr>
<td>Ask questions when appropriate and come to office hours when additional help is needed.</td>
<td>Communicate professionally and respectfully to your students and let...</td>
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needed. If you hit a road block in life, which is affecting school talk to your instructor early! She may have some good advice!

Remain engaged in activities. If you are having a bad day and cannot keep up then consider recording the lessons.

students know if you have to cancel class or office hours for any special reason (in GA VIEW and/or email).

CHALLENGE your students to do their best! Don’t be tempted to water it down!

Course Learning Outcomes:

Upon completing BIOL 4620 the student should be able to...

- Competently explain various aspects of environmental microbiology and microbial ecology.
- Analyze genomic data, build phylogenetic tree and describe various aspects of bioinformatics related to prokaryotic organisms.
- Accurately describe various metabolic pathways used by environmental microorganisms and a diverse community of microorganisms interact with one another in natural ecosystem.
- Describe how microorganisms impact public health and industry.
- Demonstrate how microorganisms and microbial metabolic products are used in various industries and healthcare.
- Accurately read, analyze and present data from journal articles pertaining to applied and environmental aspects of microbiology.
- Design an experiment related to applied microbiology, execute the experiment, analyze the data and communicate the results pertaining to the experiment.
- Make a useful and safe product using bacteria and/or fungi.
- Demonstrate knowledge of antibiotics commonly used to treat diseases and demonstrate knowledge on how to screen antibiotic effectiveness.

Program Learning Outcomes:

- Biology Outcomes applicable to this course
  1. Effectively demonstrate knowledge of the basic principles of major fields of biology.
  2. Demonstrate a mastery of a broad range of basic lab and technology skills applicable to biology.
  3. Apply knowledge of physical sciences, mathematics, and statistics to biological concepts.
4. Communicate scientific information in a clear and concise manner both orally and in writing.
5. Demonstrate the ability to collect, evaluate and interpret scientific data, and employ critical thinking to solve problems in biological science and supporting fields.
6. Collaborate effectively on team-oriented projects.
7. Demonstrate the ability to identify and describe the impact of biological and physical sciences on the environment and society.

Term:

Spring Semester 2013

Instructor:

Dr. Michelle Furlong
Office: 128 Faculty Hall
phone: (678) 466-4778
e-mail: MichelleFurlong@mail.clayton.edu
internet: http://faculty.clayton.edu/mfurlong

Office hours: click here. It is important to make an appt. if you want to meet with me outside of office hours (just see me after class and we can schedule it).

Class Meetings:

Classroom: Arts and Sciences G213

Class Times: TR 11:15 a.m.-12:30 p.m.

Text Information:

Biology of Microorganisms, (13th edition), by Madigan, Martinko, Stahl & Clark
Any edition will do really
Evaluation:

<table>
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<tr>
<th>Assessment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Assignments and Presentations</td>
<td>45%</td>
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<tr>
<td>2 Exams (midterm and final exam) each equally weighted.</td>
<td>45%</td>
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<tr>
<td>Quizzes given in GA View</td>
<td>10%</td>
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<tr>
<td>Totals</td>
<td>100%</td>
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Grading:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tr>
<td>A</td>
<td>90-100%</td>
</tr>
<tr>
<td>B</td>
<td>80-89%</td>
</tr>
<tr>
<td>C</td>
<td>70-79%</td>
</tr>
<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>F</td>
<td>below 60%</td>
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Mid-term Progress Report

The mid-term grade in this course, which will be issued on Feb. 25, reflects approximately 30% of the entire course grade. Based on this grade, students may choose to withdraw from the course and receive a grade of "W." Students pursuing this option must fill out an official withdrawal form, available in the Office of the Registrar, or withdraw on-line using the Swan by mid-term, which occurs on March 1. Instructions for withdrawing are provided at this link.

The last day to withdraw without academic accountability is Friday March 1, 2013.

Course Schedule:

Link to Course Schedule and course presentations (this will be linked before class).

Course policies:
• Students must abide by policies in the Clayton State University Student Handbook, and the Basic Undergraduate Student Responsibilities.

• **University Attendance Policy:** Students are expected to attend and participate in every class meeting. Instructors establish specific policies relating to absences in their courses and communicate these policies to the students through the course syllabi. Individual instructors, based upon the nature of the course, determine what effect excused and unexcused absences have in determining grades and upon students’ ability to remain enrolled in their courses. The university reserves the right to determine that excessive absences, whether justified or not, are sufficient cause for institutional withdrawals or failing grades.

• **Course Attendance Policy:** Attendance is expected for all class periods. Attendance is required for examination and quiz periods. Any absence must be accompanied by a written excuse from a doctor or other competent authority.
  - Without excuse, a grade of zero points will be assigned for any missed work, INCLUDING Exams.
  - If a valid excuse is provided you will be excused from exam and your cumulative final exam will count at a higher percentage (45% total). With a valid excuse, if you miss the final you will be given in incomplete.
  - If you miss more than one exam with excused absences, then you will receive a zero and should probably drop or consider a hardship withdrawal if you qualify for one (see academic catalog).
  - There are no make-up quizzes. They will be opened in GA View up to 1 week prior to their due date.

• Assignments are due on time. 10% will be deducted each day from any assignment turned in late. If an assignment is up to 24 hours late then you lost 10%. If an assignment is 25-48 hours late then you lost 20% and if it is 49-72 hours late then you will lose 30%. If an assignment is over 72 hours late then it will NOT BE ACCEPTED and you will receive a zero. Assignments can be emailed if you cannot make it to campus, but this should not be a regular practice. Expect to print your own assignments and turn them in. Only use email for your assignments if you are unable to make it to campus to turn it in.

• Any type of activity that is considered dishonest by reasonable standards may constitute academic misconduct. The most common forms of academic misconduct are cheating and plagiarism. All instances of academic dishonesty will result in a grade of zero for the work involved. All instances of academic dishonesty will be reported to the Office of Student Life/Judicial Affairs. Judicial procedures are described beginning on page 14 of the Student Handbook (Procedures for Adjudicating Alleged Academic Conduct Infractions).

• Specific examples of academic dishonesty:
  - Copying a classmates work on exams or assignments (even if you change a couple of words).
• Copying things directly out of the book, a website, an article (even if you change a couple of words). Copying a person’s thoughts is dishonest EVEN if you include a citation. Putting quotes around the thought does not make it OKAY. Paraphrase it! Quotes are only suitable if the actual statement (written word for word) is necessary to get a specific point across. Please consult your instructor if you are uncertain.

• Turning somebody else’s work in as your own work.

• Using electronic devices (examples: cell phones, computers, tablets, programmed calculators) or notes that are not approved by the instructor on exams or quizzes.

• **Disruption of the Learning Environment:** Behavior which disrupts the teaching–learning process during class activities will not be tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from class. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF.

Please remember, your freedom to talk, use a cell phone or any electronic device, physically act out in class end when it disrupts others from learning or disrupts your instructor from teaching. Please refrain from doing do unless you and the rest of the class are experiencing danger.

A more detailed description of examples of disruptive behavior and appeal procedures is provided at: