Biology 2420  
Course Syllabus: Summer 2014

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

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<table>
<thead>
<tr>
<th>Office Hours</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Online</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>After Class</td>
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<td>None</td>
<td>Anytime</td>
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The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Catalog Course Description (include prerequisites):

4 credit hours.  
Lecture/Lab/Clinical: Six hours of lecture and six hours of lab each week.  
Prerequisite: BIOL 2401 or BIOL 1407. High school chemistry or CHEM 1406 strongly recommended prior to enrollment.

A study of microbiology emphasizing prokaryotic and eukaryotic cell structure and function, microbial metabolism, growth and control of microbes, survey of microorganisms and viruses. Other topics for discussion include microbial genetics and immunology.

Note: Additional course fee(s) required.

Required Textbook(s):  
Hearron, Deming, Microbiology Lab Manual, 4th Ed., NTCC.

Recommended Reading(s):  

Student Learning Outcomes:

(1) Establish an understanding of the major historical events in microbiology and their impact on medical science.  
(2) Describe basic cell structure, biochemistry, metabolism, nutrition, reproduction and genetics of microorganisms with an emphasis on bacteria.  
(3) Compare and contrast the various types of pathogenic microorganisms including bacteria, fungi, viruses, protists, and helminths with an emphasis on their medical significance.  
(4) Describe various methods of microbial control both in vivo and in vitro.  
(5) Demonstrate knowledge of basic principles of immunology.
(6) Demonstrate knowledge of the basic principles of epidemiology.
(7) Compare and contrast the mechanisms of transmission, entry, pathogenesis, and prophylaxis of selected human pathogens.
(8) Demonstrate skill in aseptic transfer techniques and discuss the importance of general aseptic techniques.
(9) Demonstrate skill in basic microscopy, morphological staining, culture techniques, and biochemical differentiation of selected human pathogens.

Exemplary Educational Objectives:

Biology 2421 is only one of several courses offered at NTCC that is part of the natural sciences core curriculum. The educational objectives of the NTCC core curriculum include the exemplary educational objectives proposed by the Advisory Committee on Core Curriculum and approved by the Texas Higher Education Coordinating Board in 1998 (NTCC Catalog 81).

The objective of the study of a natural sciences component of a core curriculum is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the basis for building and testing theories. The exemplary educational core objectives for natural sciences are:

3.1 to understand and apply method and appropriate technology to the study of natural sciences;

3.2 to recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing;

3.3 to identify and recognize the differences among competing scientific theories;

3.4 to demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies; to demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture

Lectures & Discussions:

Week 1: Introduction & Chapter 1 - Main Themes of Microbiology
   Ch. 2 – The Chemistry of Biology
   Ch. 3 - Tools of the Laboratory: Methods for Studying Microorganisms
   Ch. 4 - Survey of Prokaryotic Cells and Microorganisms
   Ch. 5 – Survey of Eukaryotic Cells and Microorganisms
   EXAM 1

Week 2: Ch. 7 - Elements of Microbial Nutrition
   Ch. 8 - Microbial Metabolism
   Ch. 9 – Microbial Genetics
   Ch. 10 – Genetic Engineering
   EXAM 2

Week 3: Ch. 11 - Physical and Chemical Control of Microbes
   Ch. 12 – Drugs, Microbes, Host: The Elements of Chemotherapy
Evaluation/Grading Policy:

The final course grade will be determined by the percentage of points earned in the following:

- 5 Exams @ 40%
- Final Exam @ 20%
- Lab @ 40%

Letter Grade Assignment:

<table>
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<tr>
<th>Final Average in Percent</th>
<th>Letter Grade</th>
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<tbody>
<tr>
<td>100 – 89.5 %</td>
<td>A</td>
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<tr>
<td>79.5 – 89.4 %</td>
<td>B</td>
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<tr>
<td>69.5 – 79.4 %</td>
<td>C</td>
</tr>
<tr>
<td>59.5 – 69.4 %</td>
<td>D</td>
</tr>
<tr>
<td>0 – 59.4 %</td>
<td>F</td>
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Tests/Exams:

There will be six exams throughout the course (including the comprehensive final exam). Dates for the exams are listed in the course calendar. The tests will cover material prior to each of the exams. Exams will be given at the beginning of class on designated dates (see course calendar). The final exam will cover material from the entire course.
Assignments:

It is expected that each student will read the pre-assigned sections of the text before coming to class each day. Reading assignments for each class will be given at the end of the previous class. Trust me – this will make your understanding of the material we cover in class a WHOLE LOT easier!

Additional “Operating Guidelines”

(1) You’re spending a good deal of time, energy and money on this course – please, make the most of your investment! There is a school-mandated attendance requirement for this course (please see the "Evaluation" section for a description). If you're still struggling with certain aspects of the course, please make an effort to see me and I will gladly make time to help you work through the material with you.

(2) Make up tests and labs are very difficult to schedule. I reserve the right to give students who miss tests alternate versions of missed tests (and I will!). Other assignments (e.g. critiques) not turned in on time will be docked 25% of their final value for each day (each day, not “class day”) that they’re late.

(3) I am not here to do your work for you, nor am I here as a barrier to your learning. I will be more than happy to aid you in any way that I can, but ultimately, the lion’s share of the responsibility for your learning is on your shoulders. I don't give you grades – you give yourself grades! I am here to facilitate your learning and provide a structural framework in which you can learn.

(4) Please do not talk during class. If you feel the need to discuss something with a classmate, please do so outside. I will not be offended if you need to take an important conversation outside briefly so as not to distract your classmates. I would also appreciate it if you turned off your cell phones, pagers, etc. before class begins.

(5) I am more than willing to accept constructive suggestions regarding the class. You pay the school, the school pays me – eliminate the middle-man, and you're paying me, which makes me your employee! I cannot see the class from your perspective, so please let me know what I can do to help you learn more effectively (see Objective #3). While I have the final say on all matters regarding the operation of this course, I want you to know that your input is both valuable and appreciated!

(6) Blackboard: Blackboard will be used to supplement this class. I will use the Blackboard email to communicate with my students. Class Lecture Notes and Exam Reviews will be posted on Blackboard. I will not provide hard copies in class. Please forward your email from Blackboard to your personal email account so that I can communicate with you. Your grades will be posted on Blackboard. It is your responsibility to check Blackboard regularly for any important information. I will not call you, I will use Blackboard. You may contact me directly through my email at: rfenton@ntcc.edu
Student Responsibilities/Expectations:

Class Participation
While there is no “formal” assessment of your participation in class, it is appreciated and will no doubt aid in your learning (and your classmates’ learning) of the material! Don’t be afraid to speak up in class – nobody’s ego is on the line and you certainly won’t “look stupid” if you do! 😊

NTCC Academic Honesty Statement:
"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

Academic Ethics
The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

ADA Statement:
It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

Family Educational Rights And Privacy Act (Ferpa):
The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children’s educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered “eligible students.” In essence, a parent has no legal right to obtain information concerning the child’s college records without the written consent of the student. In compliance with FERPA, information classified as “directory information” may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student’s name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.