**Syllabus Spring 2013 BIO175**
**D1, D2, D3, D5**

Instructor: Adam Branson

Mailbox  N203M  
Course Website: via blackboard  
Office Hours:  
email: abranson@cfcc.edu

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**Bio 175: General Microbiology**

Class Hours:  
2 hours of lecture and 2 hours of lab per week

Credit Hours:  
3 credits

Prerequisites:  
BIO 110, BIO 111, BIO 163, BIO 165, or BIO 168

Course Summary:

*This course covers the principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques.*

Course Objectives:

Upon completion students should demonstrate knowledge of microorganisms and the disease process including the following topics:

1. Basic biological chemistry  
2. Prokaryotic and eukaryotic cell structure and function  
3. Viral structure and function  
4. Microbial metabolism and growth  
5. Antimicrobial therapy  
6. Infectious disease transmission and diagnosis  
7. Host defenses  
8. Infectious diseases affecting specific organ systems

Students should also be able to perform the following microbiological laboratory techniques:

1. Aseptic technique  
2. Pure culture techniques  
3. Antimicrobial testing  
4. Bacterial identification including simple and Gram staining, motility tests, and metabolic tests

CFCC General Education Competencies will incorporate all or some of the following:

1. Written communication  
2. Oral communication
3. Critical thinking
4. Basic computer usage
5. Understanding social structure
6. Problem solving
7. Understanding scientific concepts & application

Required Course Materials:
3. Access to a computer with internet connection
   a. Instructions for lab assignments are posted on Campus Cruiser. Lab assignments are submitted electronically.
   b. Fill out a permission slip to use the computers in the N407 Science Study Room.

Recommended Course Materials:
1. Copies of lecture slides and lab handouts from Black Board
   a. Do not print materials on the Learning Lab or Library printers. The Library Learning Lab (L building) has course handouts available for photocopying. Make sure the handouts are the updated versions for the current semester.
2. 3-ring binder & colored pencils or pens
3. Disposable gloves & lab coat

Grading Policy:
You will be graded on a 100-point system (your final average is rounded up to the nearest point) according to CFCC’s 8 point scale (see below for breakdown). A missed exam or assignment will be counted as a zero (see make-up policy). Your final average will be calculated from scores on the following assignments:

4 Lecture Exams 50-100pts each
   Each exam covers lecture material and chapters from the text. An exam consists of 30-40 multiple choices questions and 5-10 short answer questions. You will have the entire class period to complete the exam.

Lab Techniques Practical 25pts
   This hands-on project will be completed by each student individually. Each student’s ability to utilize the tools of the microbiologist will be assessed.

Lab Report on Staphylococcus 50pts
   This hands-on project will be completed by each student individually over six lab periods. A written report of the project in the form of a scientific paper will be submitted to demonstrate an understanding of how the tools of the microbiologist are used to investigate biological phenomena.

Lab participation 10pts
Each lab meeting will be worth 10 pts, YOU MUST BE PRESENT TO RECEIVE POINTS. These points cannot be made up. I will deduct points based on effort and safety.

The 8-point CFCC grade scale is as follows:

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<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>92 – 100</td>
<td>A 4.00</td>
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<tr>
<td>84 – 91</td>
<td>B 3.00</td>
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<td>76 – 83</td>
<td>C 2.00</td>
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<tr>
<td>68 – 75</td>
<td>D 1.00</td>
</tr>
<tr>
<td>0 – 67</td>
<td>F 0.00</td>
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WP withdraw passing (not computed into GPA)
WF withdraw failing (equivalent to F)
I incomplete (paper work required)

Attendance:

You may only miss THREE (3) classes over the semester; the fourth absence will result in an F for the course. Tardies will also be assessed, 2 tardies = 1 absence! You will not be admitted to class late on exam days nor be allowed to take the exam, so be on time!

Students are responsible for signing the attendance sheet at the beginning of each class session. "I FORGOT" IS NOT A VALID EXCUSE! If you do not sign in, you will be marked absent for the entirety of class. To get full credit for attendance, you must be present for the entirety of each class meeting. If you arrive late or leave early by more than 15 minutes for any reason, you will be marked absent for that class time. THERE ARE NO EXCUSED ABSENCES.

Attendance is counted from the first class meeting for all students including late entrants. Students who have not attended at least once by the 10 percent date of the class (within the first 4 class meetings) will be dropped by the instructor as having “never attended”. Students will not be able to start the class after this date. No tuition and fee adjustments will be made. You are responsible for obtaining the withdrawal form, I will then sign it and YOU are responsible for turning it in by the withdrawal date. I am not responsible for you either not picking up your form once I have signed it, or you failing to turn it in.

Make-Up Policy:

At the discretion of the instructor, an exam may be taken early with no penalty. It is your responsibility to schedule a time with the instructor in advance. If you miss an exam, THERE WILL BE NO MAKE UPS. If you miss a lab, the Microbiology lab (N404) under supervision of a Lab Assistant will also be open at various times during the week (to be announced) for extra help. To attend one of these sessions, you must contact the assistant 24hrs before your session. You will still not receive 10pts for the lab you missed. It is your responsibility to obtain any missed notes from a classmate.

Special Accommodations:

Any student who requests classroom accommodations because of a disability must present documentation to verify his/her disability. This documentation must be furnished to the Disabilities Service Coordinator (Room A215), and this should be provided prior to requesting accommodation by the instructor. On a confidential basis, the student, disabilities services and the instructor will determine the appropriate accommodations following documentation. Accommodations will be provided in a manner that is consistent with the objectives, outcomes, and academic standards of the course. Absences must not exceed class attendance policy. Please make arrangements for exam times and rooms at least one week in advance.

N407 Science Study Room:

A study room has been set up in N407 for use by all biology & chemistry students at CFCC. The room has been established as the official Science Learning Lab where students may set up appointments to meet with science tutors. You must fill out a permission slip for each science course for which you are registered to have access to the computers and resources in this room. For more information, please see the schedule posted on the door to N407 and contact the appropriate tutors.
Supplemental Instruction:

This semester, Supplemental Instruction (S.I.) will be offered for BIO 175. The S.I. leader will hold weekly sessions to review topics covered in both lecture and lab. Contact information for the S.I. leader and S.I. meeting times will be announced at the beginning of the semester.

Academic Honesty:

Any behavior indicating dishonesty, unethical intent or action as specified by CFCC will result in an “F” for the course. Please read the section on “Cheating” in the CFCC Catalog and Student Handbook.

Plagiarism is using as your own the words or ideas of another, whether written or oral. When you use material from a source, you must quote or paraphrase accurately and properly cite the information. Failure to do so is considered plagiarism. Examples of plagiarism include word-for-word copying without correctly indicating that you are quoting, inaccurate quoting and paraphrasing, and incomplete or missing documentation. Purchasing a paper or copying someone else’s work and submitting it as your own are also plagiarism. Any misrepresentation of the source in your writing or speaking would constitute a form of plagiarism.

Whether intentional or unintentional, plagiarism is not acceptable and will result in the student being assigned a grade of zero for the assignment and/or the course, at the instructor’s discretion.

Children on Campus Policy:

Per CFCC policy (Catalog & Student Handbook), children cannot be taken into classrooms, laboratories or shops unless authorized by College personnel. Please be advised that, in part due to liability issues, children are not allowed into any classroom.

Contingency Plan:

If there is an emergency and the instructor or an appropriate substitute does not meet with the class, wait fifteen minutes. Then, everyone in the class should sign a roll sheet and designate someone to take it to the Science Department Chair or Secretary in N203.

Student Accounts:

Your myCFCC account is a single username and password for all of your CFCC network accounts: email, WebAdvisor, Blackboard, campus computer access, and more. The email account provided to you ([yourusername@mail.cfcc.edu](mailto:yourusername@mail.cfcc.edu)) is used for all official communication with CFCC instructors and staff. Some information will ONLY be sent by email and not by postal mail, so it is very important that you check this account. This account may also be used for personal mail, but is subject to the CFCC Acceptable Use Policy. Be sure to logout of your account in each service you may have opened (email, Blackboard, etc) when you leave a shared computer, otherwise it is possible for the next user of the computer to access your information.

Class Conduct:

1. **TAKE RESPONSIBILITY** for your performance. Put in the appropriate time and effort and you will have no need to make excuses or ask for special favors. Read and understand the syllabus.

2. **SHOW UP** on time and stay for the duration of class. You registered for these class times; it is your responsibility to attend. If work schedule, family commitments, or health issues prevent you from attending class on a regular basis, a withdrawal is highly recommended. See the attendance policy.

3. **BE COURTEOUS** to your fellow students as well as to your instructor. No unnecessary talking during class. **TURN OFF CELL PHONES!** If you cannot show respect for your instructor and fellow students, you will be asked to leave class.
4. **NO CHEATING**, copying, or plagiarism. Take responsibility for your own work. Any student caught cheating will be dismissed from class and given an “F” for their course grade. See the CFCC Student Handbook for policy.

5. **GET HELP.** I encourage you to get together with fellow students in study groups. There are free tutors available in the Science Study Room in N407. Attend S.I. sessions. I have office hours.

6. **PRACTICE SAFETY** in the lab. Safety is of the utmost importance in lab. Students are expected to follow the lab rules. Any student who regularly works in an unsafe manner and endangers others will be removed from lab.

7. **DO NOT BE A “LAB LEECH”.** Your lab partners are not responsible for doing your work. If you choose not to work cooperatively with you lab partners, you will work on your own. You will lose the 10pts for the lab for not contributing.

Schedule:

**Lectures**

Although each exam focuses on the information covered during lecture, students are also expected to read and comprehend the relevant textbook chapters. If lecture is missed, it is the responsibility of the student to get information from other students and/or the website to get caught up

**Lab**

Exercises are performed both individually and in groups. Students are expected to come prepared by reviewing the relevant techniques before arriving to lab. Students are expected to participate in lab and take notes. Safety is of the utmost importance. All students are expected to follow proper lab procedures and act according to documented lab safety rules, which are provided by the instructor.

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<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>Friday 1/4</td>
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<td>COURSE OVERVIEW (syllabus)</td>
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<td></td>
<td></td>
<td>MICROBIOLOGY &amp; CELLS</td>
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<tr>
<td></td>
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<td>Introduction to Microbiology (1)</td>
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<td>LAB TECHNIQUES</td>
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<td>The Invisible World of Microbes (2)</td>
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<td>1</td>
<td>Monday 1/7 To Friday 1/11</td>
<td>LAB TECHNIQUES</td>
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<td>MICROBIOLOGY &amp; CELLS</td>
<td>Safety in the Microbiology Laboratory (1)</td>
</tr>
<tr>
<td></td>
<td>Introduction to Microbiology (1)</td>
<td>The Invisible World of Microbes (2)</td>
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<td></td>
<td>Prokaryotic cells (3)</td>
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<td>2</td>
<td>Monday 1/14 To Friday 1/18</td>
<td>LAB TECHNIQUES</td>
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<td>MICROBIOLOGY &amp; CELLS</td>
<td>Microscopy (3 &amp; textbook chapter 2)</td>
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<td>Prokaryotic cells (3)</td>
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<tr>
<td></td>
<td>Eukaryotic cells (4)</td>
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<tr>
<td>3</td>
<td>Monday 1/21 To Friday 1/25</td>
<td>LAB TECHNIQUES</td>
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<td>HOLIDAY</td>
<td>Microscopy (3 &amp; textbook chapter 2)</td>
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<td>4</td>
<td>Monday 1/28 To Friday 2/1</td>
<td>LAB TECHNIQUES</td>
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<td>LECTURE EXAM 1 <em>(Ch. 1, 3, &amp; 4)</em></td>
<td>Staining of Bacterial Cells (4)</td>
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<td>VIRUSES &amp; MICROBIAL CONTROL</td>
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<td>Viruses (5)</td>
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<td>5</td>
<td>Monday 2/4 To</td>
<td>LAB TECHNIQUES</td>
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<td></td>
<td>VIRUSES &amp; MICROBIAL CONTROL</td>
<td>Aseptic technique (5)</td>
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<td></td>
<td>Viruses (5)</td>
<td>Quadrant streak (6)</td>
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<td></td>
<td>Microbial Control (9)</td>
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<td>Week</td>
<td>Lecture</td>
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<td>6</td>
<td><strong>VIRUSES &amp; MICROBIAL CONTROL</strong>  &lt;br&gt; Microbial Control (9)  &lt;br&gt; Antimicrobial chemotherapy (10)</td>
<td><strong>LAB TECHNIQUES</strong>  &lt;br&gt; Smear prep (7)  &lt;br&gt; <strong>LAB TECHNIQUES PRACTICAL</strong>  &lt;br&gt; Introduction &amp; Part I (8 &amp; 9)</td>
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<td>7</td>
<td><strong>VIRUSES &amp; MICROBIAL CONTROL</strong>  &lt;br&gt; Antimicrobial chemotherapy (10)</td>
<td><strong>LAB TECHNIQUES PRACTICAL</strong>  &lt;br&gt; Part II (10)</td>
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<td>8</td>
<td><strong>LECTURE EXAM 2 (Ch. 5, 9, &amp; 10)</strong>  &lt;br&gt; PATHOGENS &amp; HOST DEFENSE  &lt;br&gt; Pathogenesis (11)</td>
<td><strong>LAB TECHNIQUES PRACTICAL</strong>  &lt;br&gt; Part III &amp; Part IV (11 &amp; 12)  &lt;br&gt; CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Introduction &amp; Part I (13 &amp; 14)</td>
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<tr>
<td>9</td>
<td>PATHOGENS &amp; HOST DEFENSE  &lt;br&gt; Pathogenesis (11)</td>
<td>CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Part II (15)</td>
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<td>10</td>
<td>PATHOGENS &amp; HOST DEFENSE  &lt;br&gt; Nonspecific defense (12)</td>
<td>CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Part III (16)</td>
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<tr>
<td>11</td>
<td>PATHOGENS &amp; HOST DEFENSE  &lt;br&gt; Immunity &amp; vaccines (13)</td>
<td>HOLIDAY</td>
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<td>12</td>
<td><strong>LECTURE EXAM 3 (Ch. 11-13)</strong></td>
<td>CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Part IV (17)</td>
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<td>13</td>
<td><strong>DISEASES BY BODY SYSTEM</strong>  &lt;br&gt; Skin diseases (16)  &lt;br&gt; Nervous diseases (17)</td>
<td>CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Part V (18)</td>
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<tr>
<td>14</td>
<td><strong>DISEASES BY BODY SYSTEM</strong>  &lt;br&gt; Cardio &amp; lymphatic diseases (18)  &lt;br&gt; Respiratory diseases (19)</td>
<td>CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Part VI &amp; VII (19 &amp; 20)</td>
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<td>15</td>
<td><strong>LIBRARY COMPUTER ROOM FOR LAB REPORT HELP 8-9am in L202</strong></td>
<td><strong>CASE STUDIES</strong>  &lt;br&gt; DUE – LAB REPORT: CARRIERS OF STAPHYLOCOCCUS AUREUS  &lt;br&gt; Submit via Blackboard by midnight on Friday 5/3</td>
</tr>
<tr>
<td>16</td>
<td><strong>DISEASES BY BODY SYSTEM</strong>  &lt;br&gt; Gastrointestinal diseases (20)  &lt;br&gt; Genitourinary diseases (21)</td>
<td>EXAM 4 REVIEW</td>
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<td>17</td>
<td><strong>LECTURE EXAM 4 (Ch. 16-21)</strong></td>
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Religious Observances: Students will be allowed two days of excused absence each academic year for religious observances required by the faith of the student. These excused absences will be included in the three absences. Students are required to provide written notice of the request for an excused absence by completing the Religious Observance Absence form available in Student Development. The completed form must be submitted to the Vice President of Student Development or his/her designee a minimum of ten (10) school days prior to the religious observance. The Vice President of Student Development or his/her designee will notify the instructor within three (3) school days of receiving the request. Students will be given the opportunity to make up any tests or other work missed due to the excused absence and should work with their instructors in advance of the excused absence to delineate how to make up the missed coursework (N.C.G.S. 115D-5).

Accommodation of Special Needs Based on Disability: Any student who requests classroom accommodations because of a disability must present documentation to verify his/her disability. This documentation must be furnished to the Disabilities Service Coordinator and this should be provided prior to requesting accommodation by the instructor. On a confidential basis, the student, disabilities services and the instructor will determine the appropriate accommodations following documentation. Accommodations will be provided in a manner that is consistent with the objectives, outcomes, and academic standards of the course. Absences must not exceed class attendance policy.

TOBACCO FREE CAMPUS POLICY:
Cape Fear Community College:
- Is committed to providing its employees and students with a safe and healthful environment.
- Recognizes the use of tobacco products on campus grounds is detrimental to the health and safety of students, staff, faculty and visitors.
- Recognizes that it has the legal authority to prohibit tobacco use pursuant to G.S. 143-599.

Therefore, Cape Fear Community College has set the following 100% tobacco free campus policy, to be implemented on August 1, 2009.

Use of tobacco is prohibited by students, staff, faculty or visitors:
- in all campus buildings, facilities or property owned or leased by Cape Fear Community College and outside areas of the campus;
- on campus grounds, facilities, or in vehicles that are the property of the college;
- at lectures, conferences, meetings, athletic, social and cultural events held on college property;
- for the purposes of this policy, tobacco is defined as any type of tobacco product including, but not limited to, cigarettes, cigars, cigarillos, pipes, bidis, hookahs, smokeless or spit tobacco or snuff, e-cigarettes or any product simulating smoking instruments;
- Except at a specific location(s) on the North Campus as approved by the College President due to unsafe conditions going off-campus.

Disclaimer:
Information contained in this syllabus was, to the best knowledge of the instructor, considered correct and complete when distributed for use at the beginning of the semester. The instructor reserves the right, acting within the policies and procedures of Cape Fear Community College, to make changes in course content or instructional techniques without notice or obligation.