BIO- 22001, Microbiology
Summer 2013, 3.0 Credits

Instructor: Nicole Guilmette-Biagioni, Ph. D., Visiting Associate Professor
email: nguilmette@bhcc.mass.edu
Office: Higgins 225
Office Hours: Monday-Wednesday 2:00-3:00PM
Telephone: (617) 228-2363
Schedule (class times and day(s)): Monday-Thursday, 11:00-2:00PM,
                                    July 15, 2013 to August 1, 2013
Room: Higgins 225

Boston College Mission Statement

Strengthened by more than a century and a half of dedication to academic excellence, Boston College commits itself to the highest standards of teaching and research in undergraduate, graduate and professional programs and to the pursuit of a just society through its own accomplishments, the work of its faculty and staff, and the achievements of its graduates. It seeks both to advance its place among the nation's finest universities and to bring to the company of its distinguished peers and to contemporary society the richness of the Catholic intellectual ideal of a mutually illuminating relationship between religious faith and free intellectual inquiry.

Boston College draws inspiration for its academic societal mission from its distinctive religious tradition. As a Catholic and Jesuit university, it is rooted in a world view that encounters God in all creation and through all human activity, especially in the search for truth in every discipline, in the desire to learn, and in the call to live justly together. In this spirit, the University regards the contribution of different religious traditions and value systems as essential to the fullness of its intellectual life and to the continuous development of its distinctive intellectual heritage.

Course Description
Studies basic physiological and biochemical activities of bacteria, viruses and fungi. Emphasis placed on virulence factors and the mechanism by which a variety of micro-organisms and viruses establish an infection. The use of anti-viral drugs and antibiotics, the host immune response to microbial infection, and the effectiveness of various vaccination strategies also discussed. Anatomy & Physiology required.

Course Objectives
Students who successfully complete this course will be able to demonstrate: knowledge of:

• the general morphology, physiology and metabolism of bacteria, viruses, fungi and protozoa.
• the genetics and molecular biology of bacteria and viruses.
• Microbial history and classification.
• the various types of symbiotic relationships between microorganisms and humans
• disease transmission and the methods used to control microbial growth as part of disease prevention.
• Nosocomial infection and how to prevent it.
• research efforts to counteract microbial resistance
• examples of infectious diseases, including those of importance locally, nationwide and worldwide.
• methods of various types of immunization, antibiotics and antiviral drugs to treat disease.
• the normal immunological functions of the human body and how the body defends itself against and responds to microbial infections.
• the mechanisms by which bacteria, fungi, parasites and viruses attack the body to cause disease.
• prevention, and epidemiology of infectious diseases including the impact of infectious agents on the human body particularly the most frequent manifestations and life threatening conditions resulting from common microbial infections.
• Recombinant DNA technology, applied microbiology and biotechnology Laboratory

Objectives: Students who successfully complete this course will be able to demonstrate:

• competence in performance and interpretation of certain routine clinical laboratory microbiological methods including aseptic technique, the Gram stain, isolation of pure cultures, antibiotic sensitivity testing, and the effectiveness of topical disinfectants.

Grading

<table>
<thead>
<tr>
<th>Exam</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>20</td>
</tr>
<tr>
<td>II</td>
<td>20</td>
</tr>
<tr>
<td>III</td>
<td>20</td>
</tr>
<tr>
<td>Lecture Quizzes</td>
<td>12</td>
</tr>
<tr>
<td>Homework 1</td>
<td>8</td>
</tr>
<tr>
<td>Homework 2</td>
<td>10</td>
</tr>
<tr>
<td>Homework 3</td>
<td>10</td>
</tr>
</tbody>
</table>

Exams are made up of a combination of multiple choice, matching, true/false, short answer and essay. They are GIVEN IN LECTURE, at the BEGINNING OF LECTURE, so DON’T BE LATE!!! Homework assignments are due the day of the exam, before the exam begins or will not be accepted. Exams and homework are to be done BY YOURSELF. THEY ARE NOT CONSIDERED GROUP WORK. Working together or copying homework is considered cheating and will be punished as such!

No “extra work” (research papers, laboratory investigations, independent study, etc.) will be accepted to replace coursework in the categories listed above. Cell phones, PDAs, computers, portable media players, tablets, translators and any other devices capable of texting or internet connection and/or playing audio or video electronic files are not allowed for support on exams and quizzes.

Summer Grading System
The undergraduate grading system consists of twelve categories: A (4.00), A- (3.67), excellent; B+ (3.33), B (3.00), B- (2.67), good; C+ (2.33), C (2.00), C- (1.67), satisfactory; D+ (1.33), D (1.00), D- (0.67), passing but unsatisfactory; F (0.00), failure; I (0.00), incomplete; F (0.00), course dropped without notifying office; W (0.00), official withdrawal from course. The graduate grading system is A (4.00), A- (3.67), Excellent; B+ (3.33), B (3.00), good; B- (2.67), C (2.00), passing but not for degree credit; F (0.00), failure.

Grade Reports. All students are required to log into the web through Agora to access their summer grades. Students must utilize their BC username and password to log on. If your username or password is not known, the HELP Desk located in the Campus Technology Resource Center (CTRC) in O’Neill Library will issue a new one. The CTRC requires a valid picture ID (a BC ID, driver’s license or passport) to obtain your password.

REQUIRED MATERIAL:


Lab Manual: Will be photocopied for you at no extra charge.
Important Policies
http://www.bc.edu/content/bc/schools/advstudies/guide/academicinteg.html

Written Work
Graduate and undergraduate students are expected to prepare professional, polished written work. Written materials must be typed in the format required by your instructor. Strive for a thorough, yet concise style. Cite literature appropriately, using APA, MLA, CLA format per instructors decision. Develop your thoughts fully, clearly, logically and specifically. Proofread all materials to ensure the use of proper grammar, punctuation, and spelling. You are encouraged to make use of campus resources for refining writing skills as needed [http://www.bc.edu/libraries/help/tutoring.html].

Scholarship and Academic Integrity
It is expected that students will produce original work and cite references appropriately. Failure to reference properly is plagiarism. Scholastic dishonesty includes, but is not necessarily limited to, plagiarism, fabrication, facilitating academic dishonesty, cheating on examinations or assignments, and submitting the same paper or substantially similar papers to meet the requirements of more than one course without seeking permission of all instructors concerned. Scholastic misconduct may also involve, but is not necessarily limited to, acts that violate the rights of other students, such as depriving another student of course materials or interfering with another student’s work.

Use of Electronic Devices
The use of cell phones, computers, tables and other electronic devices are allowed during lectures sessions but should not be a distraction for other students or the instructor. Cell phones are expected to have ringers set to a low volume or on vibrate and conversations should be conducted outside the classroom when the class is in session. During exams and quizzes only the reference materials provided by the instructor and a calculator can be used. The use of any other electronic devices including but not limited to cell phones, tablets and portable media players is expressly forbidden and may result in a decreased score or a grade of zero for the quiz or exam at the instructor’s discretion.

Request for Accommodations
If you have a disability and will be requesting accommodations for this course, please register with either Dr. Kathy Duggan (dugganka@bc.edu), Associate Director, Connors Family Learning Center (learning disabilities or AHD) or Dean Paulette Durrett, (paulette.durrett@bc.edu), Assistant Dean for students with disabilities, (all other disabilities). Advance notice and appropriate documentation are required for accommodations. http://www.bc.edu/content/bc/libraries/help/tutoring/specialservices.html.

Attendance
Class attendance is an important component of learning. Students are expected to attend all classes and to arrive by the beginning of and remain for the entire class period. When an occasion occurs that prevents a student from attending class, it is the student’s obligation to inform the instructor of the conflict before the class meets. The student is still expected to meet all assignment deadlines. If a student knows that he or she will be absent on a particular day, the student is responsible for seeing the instructor beforehand to obtain the assignments for that day. If a student misses a class, he or she is responsible for making up the work by obtaining a classmate’s notes and handouts and turning in any assignments due. Furthermore, many instructors give points for participation in class. If you miss class, you cannot make up participation points associated with that class. Types of absences that are not typically excused include weddings, showers, vacations, birthday parties, graduations, etc. Additional assignments, penalties and correctives are at the discretion of the instructor. If circumstances necessitate excessive absence from class, the student should consider withdrawing from the class. In all cases, students are expected to accept the decision of the instructor regarding attendance policies specific to the class.

Consistent with our commitment of creating an academic community that is respectful of and welcoming to persons of differing backgrounds, we believe that every reasonable effort should be made to allow members of the university community to observe their religious holidays without jeopardizing the fulfillment of their academic obligations. It is the responsibility of students to review course syllabi as soon as they are distributed and to consult the faculty member promptly regarding any possible conflicts with observed religious holidays. If asked, the student should provide accurate information about the obligations entailed in the
observance of that particular holiday. However, it is the responsibility of the student to complete any and all class requirements for days that are missed due to conflicts due to religious holidays.

There may be circumstances that necessitate a departure from this policy. Feel free to contact the Summer Session Office at 617-552-3800 for consultation.
**Deadlines**
Assignments are due at the beginning of the class period on the specified dates. Late assignments will be graded accordingly.

**Make-up Policy:** Examination can be made up if the student notifies the instructor by voice-mail or e-mail prior to the exam time and has a credible reason for absence from the exam (sickness, etc.). Make-up examinations do not contain extra credit and are assigned a point value of 100 points total. Examinations missed without notifying the instructor prior to the exam time will not be eligible for make-up and will be scored as a zero. Verifiable documentation must accompany requests for make-up of the final or more than one hour examination. All make-up examinations may be recorded at a discounted value (less than 100 points) at the instructor’s discretion. There is no make-up for quizzes since one score is dropped. Late homework assignments receive less than full credit as described below.

**Course Assignments** (readings, exercises and/or experiences)

**Examinations:** There will be three, two hour examinations (scored as 100 points each but exams will normally have at least 5 points of extra credit).

**Quizzes:** Quizzes will be administered at the start of the class in all lecture sessions which do not immediately follow an examination and will reflect the topics covered the previous day. The lowest quiz scores will be dropped. No additional time will be provided students who come to class late for the quiz. As for exams students who require any special accommodations must provide written documentation prior to the first quiz taken.

**Homework:** Homework will be graded for effort and punctuality only. In both cases the assignments are normally due at the class break time (around 10:00 AM) although they may be collected at the end of the lecture period. Assignments received on time and showing reasonable effort will receive full credit. Late or incomplete assignments will receive less than full credit or a zero at the instructor’s discretion. (1.0 point each)

**Time commitment:** Students will have to spend a significant amount of preparation time in addition to the contact time especially in this compressed format course. Students should be prepared to dedicate at least 3 hours per lecture day for reading and homework assignments.

**Reserve materials:** A copy of the textbook and lab manual is also available in the library.
Tentative Lecture Schedule

Week 1: Monday: Chapters 1, 2 for Review
Tuesday: Chapter 3, 4, 10 – Classification and Microbial Cell Structure and Function
Wednesday: Quiz #1 Chapter 7, 8 - Microbial Genetics
Thursday: Exam I
Chapter 4, 5, 6– Prokaryotic Growth, Control of Microbial Growth, and Metabolism

Week 2: Monday: Chapter 11 – Medically Important Bacteria
Tuesday: Chapter 12 - Eukaryotic Microorganisms
Wednesday: Quiz #2 Chapter 12 cont, Chapter 13 – Viruses
Thursday: Exam II
Chapter 14 Infectious Agents of Animals and Plants

Week 3: Monday: Chapter 19 Host-Microbe Interactions
Tuesday: Chapter 20, 21 Epidemiology and Antimicrobial Medications
Wednesday: Quiz #3 Chapter 30 Microbial Ecology
Thursday: Exam III