MCB 4320 Molecular Microbiology
Spring 2016 Syllabus

Lecture Times: Tuesday and Thursday, 11:00 AM – 12:15 PM.

Location: CHE101A.

Text: Molecular Genetics of Bacteria, 3rd or 4th Edition, by Larry Snyder & Wendy Champness *(recommended)*.

Prerequisites: PCB3023, PCB3063 and MCB3020C.

Instructor: Dr. Lindsey Shaw

Contacts: shaw@usf.edu
Office: 813-974-2087 (ISA 6204)

Office Hours: Wednesday and Friday 1:00 PM – 2:00 PM, and by appointment.

Course Goals: Bacteria are considered to be amongst the simplest forms of life on earth. Yet the intricate and exquisite nature in which they conduct each process of their lifecycle within a single cell, without the aid of compartmentalization, is staggering. In this course we will undertake a thorough examination of the molecular events and strategies employed by both bacteria and bacteriophages. We will then apply this knowledge to bacterial behavior in the wild, to develop a detailed knowledge of how these organisms are able to adapt and respond to any given environment.

Learning Outcomes: Upon completion of this course students should be able to:

i. Understand the principles of microbial DNA replication
ii. Comprehend microbial gene transcription/translation
iii. Develop and awareness of regulatory networks/circuits
iv. Appreciate microbial developmental processes
v. Be familiar with bacterial molecular sensing and adaptation to a variety of environmental niches
vi. Develop and solid knowledge in bacteriophage biology
vii. Understand the impact of horizontal gene transfer
viii. Recognize the wealth of different mobile genetic elements

Each of these learning outcomes will be measure via the requirements listed below.
Course Website: A canvas website exists for this course. It contains a variety of course related materials including lectures notes, syllabus announcements and other items. You will be able to access your grades from this site. You may also receive course updates or other information to your USF email account.

Attendance: Attendance is mandatory, and is the responsibility of the student. Students who do not attend class may miss information not covered in the textbook, quizzes, roll call or additional course information. Should a class be missed it is the student’s responsibility to obtain class notes from another student. You may record the class for personal use with consent of the instructor, but these may not be resold. The notes and lecture content remain the intellectual property of the instructor.

Class Policy: Collegial conduct towards instructors and classmates is expected in the classroom at all times. The use of cell phones is prohibited, and they should be turned off during class, or placed on vibrate if an emergency situation is pending. NO cell phones will be permitted during examinations. Failure to adhere to this policy could result in verbal reprimand, or dismissal from the class.

Academic Dishonesty: The Department of Cell Biology, Microbiology and Molecular Biology does not tolerate academic dishonesty of any kind. Engaging in plagiarism is a form of academic dishonesty, even if the intention is not to be dishonest. Cheating of any kind will not be tolerated and may result in a failing “FF” grade for the course.

Disabilities: Students in need of academic accommodations for a disability may consult with Students with Disabilities Services to arrange appropriate accommodations. Students are required to give reasonable notice prior to requesting an accommodation.

Conduct: USF defines the disruption of academic processes as “an act of words of a student in a classroom or teaching environment which, in the reasonable estimation of a faculty member: a) directs attention from the academic matter at hand (e.g., noisy distractions; persistent, disrespectful or abusive disruptions of a lecture, exam or academic discussion), or b) presents danger to the health, safety or wellbeing of the faculty member or students. Any breach of these guidelines may result in dismissal from the classroom and an F grade.
Religious Observances: Any student who anticipates the necessity of being absent from class as the result of observing a major religious observance, must provide notice, in writing, of the date(s) to the instructor by the 2nd class meeting.

Examinations: There will be a total of five exams for this course, each worth 100 points towards your final grade. Four of these exams will be given during regularly scheduled class times and are mandatory. Whilst these exams are not cumulative, the course is designed to expand on the knowledge already built throughout the semester. There will be a 5th examination that will take the form of an optional and cumulative final exam given during finals week.

You will be permitted to drop 1 examination grade. Thus if you have taken all four of the in-class exams, and are satisfied with your grade, then you do not have to take the final exam. If you did poorly during one or more of the in-class exams, then you would likely chose to take the cumulative final. It should be noted that students are not permitted to miss a midterm exam (except for the stated, acceptable reasons below) and replace the missing grade with the final exam.

The format of exams will vary, and may include short answers, multiple choice or essay questions. If you have a question regarding examination grades you must see Dr Shaw, during regularly scheduled office hours, within 7 days of the exam being returned to you. Your combined 4 highest examination grades, equally weighted, will constitute your final grade.

Make-up Policy: The only acceptable reasons for requesting a make-up examination are medical (individual or immediate family only), legal (an accident or court case – individual only) or funerary (immediate family only). The reason for requesting the make-up must specifically relate to the time period of the missed work, and be submitted in writing to the instructor within 48 hours of the work missed. Requests for a make-up must be accompanied by written documentation by an involved professional. The instructor retains the right to make additional inquiries concerning this documentation. The instructor also retains the right to give a make-up that is different in style and content than that which was missed.

Grading: For exams the standard USF grading system will be used (see the attached scale). There will be no +/-.

Emergencies: In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of
instruction through methods that include but are not limited to: Canvas, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor Canvas site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.

**Sexual Misconduct/ Sexual Harassment Reporting:**

USF is committed to providing an environment free from sex discrimination, including sexual harassment and sexual violence (USF System Policy 0-004). The USF Center for Victim Advocacy and Violence Prevention is a confidential resource where you can talk about incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. This confidential resource can help you without having to report your situation to either the Office of Student Rights and Responsibilities (OSSR) or the Office of Diversity, Inclusion, and Equal Opportunity (DIEO), unless you request that they make a report. Please be aware that in compliance with Title IX and under the USF System Policy, educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. If you disclose any of these situations in class, in papers, or to me personally, I am required to report it to OSSR or DIEO for investigation. Contact the USF Center for Victim Advocacy and Violence Prevention: (813) 974-5757.

*Please note that I retain the right to change any portion of this syllabus. You will be notified of any such change via Canvas.*
# Molecular Microbiology Spring 2016 Schedule

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Date</th>
<th>Topic</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>01/12</td>
<td>Course Overview</td>
<td>Intro</td>
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<td>01/14</td>
<td>Chromosomes I</td>
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<td>Chromosomes II</td>
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<tr>
<td>4</td>
<td>01/21</td>
<td>DNA damage and repair I</td>
<td>11</td>
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<td>5</td>
<td>01/26</td>
<td>DNA damage and repair II</td>
<td>11</td>
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<td>6</td>
<td>01/28</td>
<td>Bacterial Gene Expression I</td>
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<td>Bacterial Gene Expression II</td>
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<td>02/04</td>
<td>Exam #1</td>
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<td>02/09</td>
<td>Regulation of Gene Expression I</td>
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<td>Regulation of Gene Expression II</td>
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<td>02/16</td>
<td>Mechanism of Genetic Regulation I</td>
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<td>02/18</td>
<td>Mechanism of Genetic Regulation II</td>
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<td>12</td>
<td>02/23</td>
<td>Regulatory Networks I</td>
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<td>02/25</td>
<td>Regulatory Networks II</td>
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<td>Spring Break</td>
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<td>Mobile Genetic Elements</td>
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<td>Antibiotic Resistance</td>
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<td>Molecular Mechanisms of Pathogenesis</td>
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<td>Reading Day</td>
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Grading Scale for Molecular Microbiology

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