

BACTERIAL PATHOGENESIS (BIOL 664)

Course description: This course for graduate students will address the molecular mechanisms by which bacterial pathogens cause disease. Bacterial infections will be considered as molecular interactions between hosts and their infecting microbes. We will consider some of the basic principles of bacterial pathogenesis before conducting a survey of the pathogens and their specific virulence factors. The course will also include some aspects of bacterial genetics and physiology, immune response to infection, and the cell biology of host-parasite interactions.

Course objectives: As a result of taking this course students should:

- Understand the importance natural flora plays in defending our body against bacterial pathogens
- Understand the basics of innate and adaptive immune responses
- Appreciate which bacterial structures are commonly seen associated with bacterial pathogens and how these function in disease
- Understand the bacterial mechanisms commonly used to avoid the immune system
- Understand the different environments of the human body and how pathogens exploit these environments to colonize and cause disease

Lectures: Tuesday & Thursday 2:30pm – 3:45pm CBC A110

Etiquette: During lecture you are expected to behave in a way that is not disruptive to the class. Eating is allowed but students should strive to eat quietly and not make a mess. Cell phones should ALWAYS be turned off.

Course materials:

Required text: Bacterial Pathogenesis: A Molecular Approach 3rd edition, Wilson, Salyers, Whitt & Winkler. ASM Press.

Supplementary texts:

- 1) Brock Biology of Microorganisms, any recent edition, Madigan, Martinko, Dunlap and Clark.
- 2) Todar's Online Textbook of Bacteriology <http://www.textbookofbacteriology.net/>

Grading:

A, 100-90%, A-, 89-87%, B+, 86-83%, B, 82-80%, B-, 79-77%, C+, 76-73%, C, 72-70%, C-, 69-67%, D, 66-57%, and F, <57%.

23.3%: Midterm 1

23.3%: Midterm 2

23.3%: Final

30%: Essay

Exams and Assignments: Exams will cover material in assigned readings and material presented in class. The format will be 40 multiple-choice, 10 true/false, and 3 short answer/essays (you pick 2). More information will be given as the exam dates approach.

Students will be given a list of essays titles which cover a variety of aspects of bacterial pathogenesis. Students will be given essay titles in the first week to research and write a 5000 word essay on their selected title. Essays should be a fully researched, up-to-date review of the chosen topic and must include citations of primary literature. Essays are due Tuesday 1st November. Essays will be critiqued and handed back (Nov 15th) for additional improvements before the final deadline of December 1st. This will be worth 30% of your final grade.

Attendance at all exams is required and an absence will result in a zero unless you (1) provide the instructor with reasonable justification of your absence before the exam (including religious holidays and official UNLV extracurricular activities) or (2) provide written documentation of the reason for your absence on official letterhead of a physician or legal authority within one week after the exam date. Eligible students will take a make-up exam. A make-up exam may not be similar to the original and it must be completed within 1 week of the original exam. A student who does not take a make-up exam within 1 week of the original exam will receive a zero for the test. **It is your responsibility to schedule a make-up exam with me! You must bring number 2 pencils to all exams!**

Grade posting: Exam grades will be sent to Rebelmail accounts or Webcampus email accounts as soon as possible after each exam. Grades will be posted under a random number of your choosing, which will need to be entered on Exam 1 and remain with you for the entire course.

Incomplete Grades: The grade of I – Incomplete – can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student’s control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving “I” grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

Final Examinations – The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>

Absences:

Religious Holidays Policy – Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or within the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

Official extracurricular activity: Students who represent UNLV in any extracurricular activity shall have the opportunity to make up assignments and exams provided that the student presents official written notification to the instructor no less than one week prior to the missed class(es).

Academic integrity:

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <https://www.unlv.edu/studentconduct/student-conduct>.

Academic dishonesty defined by UNLV “includes any act that violates the academic processes of the university. These acts include, but are not limited to, cheating on an examination, stealing examination questions, substituting one person for another at examinations, falsifying data, destroying or tampering with or stealing a computer program or file, and plagiarizing (using as one’s own the ideas or writings of another)”. The punishment recommended by UNLV for academic dishonesty may be the following: A failing grade for the course and initiating of disciplinary review as described in the university’s rules and disciplinary procedures for members of the university community. The result of the review may be a warning, probation, suspension, or expulsion. For more information visit: http://catalog.unlv.edu/content.php?catoid=5&navoid=412#Academic_Integrity

Copyright – The University requires all members of the University Community to familiarize themselves with and to follow copyright and fair use requirements. **You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

Transparency in Learning and Teaching – The University encourages application of the transparency method of constructing assignments for student success. Please see these two links for further information:

<https://www.unlv.edu/provost/teachingandlearning> & <https://www.unlv.edu/provost/transparency>

Disability Resource Center:

The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to me during office hours so that we may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach me in front of others to discuss your accommodation needs.

Other Information:

Tutoring and Coaching – The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call 702-895-3177. The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of the SSC (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TEB second floor.

UNLV Writing Center – One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. Information can be found at: <http://writingcenter.unlv.edu/>

Library Resources — Students may consult with a librarian on research needs. For this class, the subject librarian is https://www.library.unlv.edu/contact/librarians_by_subject. UNLV Libraries provides resources to support students' access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu/>.

Rebelmail – By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. **Emailing within WebCampus is acceptable.**