

Course Syllabus

Course Information

BIOL 4350, Medical Microbiology. Spring 2007.

Professor Contact Information

Dr. Suma S. Robinson

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Office: FN 3.104; office hours: M, W 12:45 to 1:30 or by appointment

Class meets on M and W between 8:30 to 9:45 in FN 2.104

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Prerequisite: BIOL 3301 or BIOL 3420. (3-0)

Course Description

Course objectives: Medical Microbiology, BIOL 4350, will familiarize students with the disease and health relationship between microorganisms and humans. The goals of the course is to have students understand, especially from a molecular point of view, the process by which microorganisms can cause disease, virulence factors they possess, the portals of entry and the consequences, host response to such conditions, the signs and symptoms of the disease, the chemical means by which diseases can be treated, methods used for identification of pathogenic organisms, and current information on pathogens and infectious diseases. Bacterial will comprise a large percentage of the pathogens studied and some viruses will also be included.

Student Learning Objectives/Outcomes. At the end of this course, students will be able to:

1. Categorize emerging vs. established diseases, describe molecular approaches to disease diagnoses and study and explain the first and second lines of defense against diseases by the human body
2. Explain how we combat diseases via vaccination and use of antibiotics as well the recurring problems of antibiotic resistance
3. Describe the features, virulence factors, characteristics of the causative organism, symptoms and progression, resistance to antibiotics and other specific, especially molecular, reasons which contribute to the success of an

organism as a human pathogen with regard to airborne, water and food borne, sexually transmitted, and vector and animal/insect borne diseases.

Required Textbooks and Materials

Bacterial Pathogenesis, a molecular approach, second edition, by Abigail A. Salyers and Dixie D. Whitt (ISBN: 1-55581-171-X).

Suggested text: Foundations in Microbiology, sixth edition by Kathleen Park Talaro. McGraw-Hill Publishing House or Microbiology: Principles and explorations, fifth edition by Jacquelyn Black or any other basic microbiology text.

Suggested Course Materials

Access to www.asm.org and ability to download PDF files

Assignments & Academic Calendar

Date	Topic	Material
January		
8	History of medical microbiology. Overview of microbiological principles	
10	Microbial evolution and bacterial diseases	Chapter 1
15	No class, MLK, Jr. day	
17	Methods to study diseases	Chapter 2
22	Diagnosing diseases: old and newer approaches	Chapter 3
24	First response by body to disease states	Chapter 4 and 5
29	Secondary response	Chapter 6
31	Vaccination	Chapter 7
February		
5	EXAM I	
7	How bacteria evade the first and second lines of defense	Chapter 8 and 9
12	Antimicrobial compounds or "Third line of defense"	Chapter 10
14	How bacteria become	Chapter 11

	resistant to antibiotics	
19	The spirochetes: Examples of zoonosis (<i>Borrelia burgdoferi</i>) and sexually transmitted disease (<i>Treponema pallidum</i>). Zoonosis continued: <i>Yersinia pestis</i>	Chapter 12 and Chapter 13
21	Spherical bacteria: Staphylococcal infections and group A and B streptococcal infections	Chapter 14 and 15
26	Airborne infections: <i>Bordetella pertussis</i> and <i>Streptococcus pneumoniae</i>	Chapter 17 and 18
28	EXAM II	
March		
5-7	Spring break	
12	Air borne bacterial pathogens continued: Tuberculosis and Legionnaire's disease	Chapter 19 and 20
14	Diseases affecting the GI tract: Ulcers and colitis	Chapter 23 and 24
19	Diseases affecting the GI tract: Cholera and Salmonellosis	Chapter 25 and 26
21	Diseases affecting the GI tract: Listeriosis, diarrhea	Chapter 27, 28
26	Extraintestinal diseases caused by <i>E.coli</i> and another versatile organism: <i>Pseudomonas aeruginosa</i>	Chapter 29 and 16
28	Sexually transmitted diseases: Gonorrhea and <i>Chlamydia trachomatis</i>	Chapter 30 and 31
April		
2	EXAM III	
4	Principles of virology	
9	Skin diseases caused by viruses: chicken pox, measles, German measles	
11	Upper and lower respiratory tract diseases caused by viruses: common cold, influenza, respiratory syncytial viral disease, Hanta virus pulmonary syndrome	
16	Upper and lower alimentary	

	system caused by viruses hepatitis, mumps and herpes simplex	
18	Viral STDs: genital herpes, papilloma viruses (genital warts, cervical cancer), AIDS	
23	Viral nervous system infections: meningitis, rabies, polio	
30	FINAL EXAM	8:00 am

Grading Policy

There are four exams in this course; each is 20% of the final grade. The remaining points are a combination of class presence and participation and involvement during paper discussion and paper presentation

All exams will be graded by the Instructor. You can review your exams during discussion of the key; they will not be returned to you. **Any change in grades or any discussion regarding the exams will be done during office hours or by appointment.**

Course & Instructor Policies

You are strongly encouraged to take all exams at the scheduled time. Unless there is a documented medical emergency, no make-up exams will be possible. Your final grade is a combination of the points made in each exam and your participation in the class as well as paper discussion. Please come to class on time and let me know in advance if you have to leave early or come late. Your participation during class contributes significantly to your final grade.

Field Trip Policies

There are no field trips scheduled for this course

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and*

Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3, and in Title V, Rules on Student Services and Activities of the university's Handbook of Operating Procedures. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Off-Campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address given below. Additional information is available from the office of the school dean. (http://www.utdallas.edu/Business Affairs/Travel_Risk_Activities.htm)

These descriptions and timelines are subject to change at the discretion of the Professor.