



**Course** BIOL-3350, BIOLOGICAL BASIS OF HEALTH AND DISEASE (Sec 001, 501)  
**Professor** Dr. ILYA SAPOZHNIKOV, M.D., Ph.D.  
**Term** SPRING, 2009  
**Meetings** Sec 001 TR 4.00-5.15PM, CN 1.120;  
Sec 501 MW 5.30-6.45 PM, JO 3.516;

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### Professor's Contact Information

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#### Teaching Assistants, SEC 001

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### General Course Information

#### **Pre-requisites, Co-requisites, & other restrictions**

The course is designed as a science elective open to all majors.

#### **Course Description**

The main goal of the course is to make the students aware of the fundamentals of pathophysiology, which focuses on the mechanisms of the diseases. These mechanisms are “the dynamic processes that (1) cause disease, (2) give rise to signs and symptoms, and (3) signify the body’s attempt to overcome disease” (M. Hansen, 1998).

The content of the course is chosen to cover conditions, which may affect dramatically the life of an individual and society in modern age.

Special emphasis will be given to the preventative aspects of each disease based on non-drug, wellness-promoting approaches.

#### **Learning Outcomes**

The main outcomes of this course consist in the ability of the students (1)

to interpret the pathological conditions of the human body as a result of a misbalanced local and systemic homeostasis; (2) to compare the normal and abnormal responses of the human organism to the different stimuli;(3) to explain the mechanisms of the effects of the specific and non-specific preventative measures;(4) to apply the obtained knowledge to their everyday life experience, using it as a tool for the primary and the secondary prevention of many diseases.

**Required Texts & Materials**

Pathophysiology. Concepts of Altered Health States, by Carol Mattson Porth; Seventh Edition (ISBN 0-7817-4988-3); Sixth Edition (ISBN 0-7817-2881-9).

The following are some websites that provide supplemental information on the issues discussed in the “Biological Basis of Health and Disease” course.

<http://www.ama-assn.org/>

1. [ama-assn.org/](http://www.ama-assn.org/) American Medical Association/JAMA
2. [americanheart.org](http://www.americanheart.org) American Heart Association
3. [cdc.gov/](http://www.cdc.gov/) Centers for Disease Control and Prevention
4. [healthfinder.gov](http://www.healthfinder.gov) Government-sponsored mega site
5. [mayohealth.org](http://www.mayohealth.org) Mayo Clinic
6. [ncbi.nlm.nih.gov/Pubmed/fulltext.html](http://www.ncbi.nlm.nih.gov/Pubmed/fulltext.html) Medline online journal links
7. [nih.gov](http://www.nih.gov) National Institutes of Health
8. [pharminfo.com](http://www.pharminfo.com) Pharmaceutical
9. [rxlist.com](http://www.rxlist.com) Drugs
10. [sciam.com/](http://www.sciam.com/) Scientific American online

**Suggested Texts, Readings, & Materials**

**Assignments & Academic Calendar**

*[Topics, Reading Assignments, Due Dates, Exam Dates]*

**The weeks of January 11, 18, 25 2009** Unit 1: The introduction to the course. Mechanisms of Infectious Disease. Immunity and Inflammation. Alterations in the Immune Response. Acquired Immunodeficiency Syndrome-AIDS. Chapters 18, 19,20,21,22.

**Sec 501-1.28. 09;  
Sec 001-1.29.09;** Unit Exam # 1(Chapters 18-22)

**The Weeks of February 1,8,15, 2009** Unit 2: Alterations in Structure and Function of the Female and Male Reproductive Systems. Sexually Transmitted Diseases. Chapters 44, 45,46,47,48.

**Sec 501-2.18.09;  
Sec 001-2.19.09;** Unit Exam #2 (Chapters 44-48)

**The weeks of February 22, March 1, 8, 2009** Unit 3: Alterations in Blood Flow in the Systemic Circulation. Alterations in Blood Pressure: Hypertension & Orthostatic Hypotension. Alterations in Cardiac Function. Atherosclerosis. Coronary Heart Disease. Heart Failure and Circulatory Shock. Chapters 23, 24, 25,26,27,28.

**Sec 501-3.11.09;**  
**Sec 001- 3. 12.09;** Unit Exam # 3( Chapters 23-28)

**The weeks of March 22,29, April 5 2009** Unit 4: Alterations in Respiratory Function. Respiratory Tract Infections, Childhood Disorders. Alterations in Ventilation and Gas Exchange. Obstructive Airway Disorders. Bronchial Asthma. Impaired Gas Exchange and Respiratory Failure. Chapters 29, 30, 31.

**Sec 501-4.8.09;**  
**Sec 001 4. 9. 09;** Unit Exam #4 (Chapters 29-31)

**The weeks of April 12, 19, 26, 2009** Unit 5: Alterations in Renal Function. Urinary Tract Infections. Disorders of Glomerular Function. Renal Failure. Alterations in Urine Elimination. Chapters 32, 35, 36, 37.

**Sec 501-4.29.09**  
**Sec 001-4.30.09** Unit Exam # 5 (Chapters 32, 35-37);

### FINAL EXAM

**Sec 501- MAY 13, WEDNESDAY, 5 PM**

**Sec 001- MAY 7, THURSDAY, 2 PM**

#### Course Policies

<p><b>Grading (credit) Criteria</b></p>	<p><b>Taking all of the Unit Exams is <u>mandatory</u>. For the students who have taken all 5 Unit Exams, the one lowest Unit Exam grade (only if it is no less than 59%) will be dropped. For students who <u>do not take all five Unit Exams or whose lowest scores lower than 59%, no grades will be dropped.</u></b>  <b>The Final Grade will be based on the Unit Exams Average plus the Final and will be calculated as the following:</b>  <b>70% from the average of the Unit Exams</b>  <b>25% from the result of the Final Exam</b>  <b>5% from the grade for the Attendance</b>  <b>The final letter grades will be assigned in accord with the following numerical scale:</b>  <b>97-100-A+</b>  <b>92-96-A</b>  <b>89-91-A-</b>  <b>85-88-B+</b>  <b>82-84-B</b>  <b>79-81-B-</b>  <b>75-78-C+</b>  <b>72-74-C</b>  <b>69-71-C-</b>  <b>65-68-D+</b>  <b>62-64-D</b>  <b>59-61-D-</b>  <b>&lt;59-F</b></p>
<p><b>Make-up Exams</b></p>	<p><b>There are no retakes. Make-up exams will be given only in the case of a documented excuse.</b></p>
<p><b>Extra Credit</b></p>	<p><b>Three bonuses for each correctly answered of the pop-quizzes that are given periodically during the lecture (the score should be no less than 80%) will be added to the grade of the appropriate unit exam.</b></p>

<b>Late Work</b>	n/a
<b>Special Assignments</b>	n/a
<b>Class Attendance</b>	<b>Regular attendance is encouraged to the utmost. Five percent of the Final Grade will come from the Grade for the Attendance</b>
<b>Classroom Citizenship</b>	<b>Sec 001-CONFERENCE CENTER 1.120. Sec 501- ERIK JONSSON ACADEMIC CENTER 3.516.</b>
<b>Field Trip Policies</b>	n/a
<b>Student Conduct and Discipline</b>	<p>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, <i>A to Z Guide</i>, which is provided to all registered students each academic year.</p> <p>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 <i>Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3</i>, and in Title V, Rules on Student Services and Activities of the university's <i>Handbook of Operating Procedures</i>. 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).</p> <p>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.</p>
<b>Academic Integrity</b>	<p>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.</p> <p>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.</p> <p>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.</p>
<b>Email Use</b>	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

	<p>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.</p>
<b>Withdrawal from Class</b>	<p>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.</p>
<b>Student Grievance Procedures</b>	<p>Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>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.</p> <p>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.</p>
<b>Incomplete Grades</b>	<p>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 <b>F</b>.</p>
<b>Disability Services</b>	<p>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.</p> <p>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)</p>

	<p>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.</p> <p>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.</p>
<p><b>Religious Holy Days</b></p>	<p>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.</p> <p>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.</p> <p>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.</p>
<p><b>Off-Campus Instruction and Course Activities</b></p>	<p>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 <a href="http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm">http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm</a>. Additional information is available from the office of the school dean.</p>

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