

SPHL 601
Biological Basis of Health and Disease
Summer 2006: Tuesday, Wednesday, Thursday 1:30PM – 4:45PM

Course Instructors:

Module 1: Tropical Medicine	Mark Wiser, PhD Richard Oberhelman, MD Mark James, PhD	wiser@tulane.edu oberhel@tulane.edu mjames@tulane.edu
Module 2: Community Health Sciences	Thomas Farley, MD, MPH Maya Begalieva, MD, MPH	tfarley@tulane.edu mbegali@tulane.edu
Module 3: Environmental Health Sciences	Maureen Lichtveld, MD, MPH	mlichtve@tulane.edu
Course Coordinator:	Maureen Lichtveld, MD, MPH	TW 2107 (office) 988-7904

Course Description

This course provides a foundation of knowledge about the human body in health and disease. It gives an overview of important concepts of the biological mechanisms of disease at the cellular, individual, and societal levels. At the cellular level, the course summarizes DNA and cellular function, genomics, immunology, and vaccination. At the individual and societal levels, the course addresses the most important infectious and non-infectious causes of death worldwide, providing background on their pathophysiology, clinical aspects, patterns of disease occurrence, risk factors, and methods of prevention. The course will be divided into three modules as indicated by the schedule.

Expectations

Students are expected to attend class *on time*, read the assigned reading materials, and understand the concepts and vocabulary presented in both class and the reading materials. The examinations will place more emphasis on material presented in the classroom than in reading assignments, but questions on the examinations may be taken from either. While students are not required to read assignments before the related class, students should read them shortly before or after the class so that reading assignments and lectures are mutually reinforcing.

Textbooks and Readings

Module 1 readings: Human Biology. Concepts & Current Issues (3rd Ed.) M.D. Johnson

Module 2 readings (required) will be in a binder that can be purchased in the Printing Office on the 8th floor. The authors and page numbers are listed below (Module 2), but they should be organized in the folder according to the sequence of class.

Module 3 readings: Outlined in lectures (see syllabus)

Optional readings Cohen BJ and Wood D. Memmler's The Human Body in Health and Disease, 9th Edition. Lippincott Williams and Wilkins. (Two copies of this textbook are available in the Community Health Sciences Department library).

Method of Evaluation

Three examinations, one at the end of each module, equally weighted.

SPHL601-01 Schedule

Date	Lecture and Readings	Instructor	
Jun	6 Cell Structure and Function Readings: M.D. Johnson (Human Biology, 3rd ed) Chapters: 1.1-1.2, 2.7, 3.1-3.5, 4.1-4.2, 13.1-13.2, 13.4	Wiser	
	6 Protein Structure Readings: M.D. Johnson (Human Biology, 3rd ed) Chapters: 2.8, 2.10, 3.7, 19.2	Wiser	
	6 DNA and Replication Readings: M.D. Johnson (Human Biology, 3rd edition) Chapters: 2.9, 17.2-17.3, 19.1	Wiser	
	7 Transcription and Translation Readings: M.D. Johnson (Human Biology, 3rd edition) Chapter 17.2	Wiser	
	7 Cell Reproduction and Differentiation Readings: M.D. Johnson (Human Biology, 3rd edition) Chapters: 17.1, 17.3-17.5, 18.1-18.3	Wiser	
	7 Biotechnology Readings: M.D. Johnson (Human Biology, 3rd edition) Chapter 20	Wiser	
	8 Immunology, part I Readings: Delves, Roitt. Advances in Immunology: the Immune System (Second of Two Parts)	James	
	8 Immunology, part II Readings: NEJM, 2000; 343(2): 108-117	James	
	8 Vaccines Readings: TO BE DISTRIBUTED	Oberhelman	
	13 Exam Module 1		
	13 Obesity Readings: Nestle & Jacobson, Public Health Reports 2000;15:13-24		Begalieva
	<i>MODULE 2 - Non-Infectious Diseases</i>		
	14 Diabetes Readings: Edelman, Type II Diabetes Mellitus. Advances in Internal Medicine 1998; 43:449-495. Maggio & Pi-Sunyer, Obesity and Type 2 Diabetes. Endocrinol Metab Clin N America 2003; 32:805-822		Begalieva
14 Ischemic Heart Disease Readings: Saliba SJ. Prevention of Coronary Artery Disease. Primary Care 2000;27:525-539		Begalieva	

- 15 Hypertension and Stroke Begalieva
Readings: He & Whelton, Epidemiology and Prevention of Hypertension. Medical Clinics of North America 1997;81:1077-1097
- 15 Breast Cancer. Colon Cancer Begalieva
Readings: Kelsey & Bernstein, Epidemiology and Prevention of Breast Cancer. Annu. Rev. Public Health 1996;17:47-67
Shike, Diet and Lifestyle in the Prevention of Colorectal Cancer: An Overview. A Symposium: Prevention of Colorectal Cancer 1999; 11-15
- 20 Health effects of smoking Farley
Readings: Fagerstrom, The Epidemiology of Smoking. Drugs 2002; 62 Suppl.2:1-9
- 20 Health effects of alcohol Farley
Readings: Thakker, An Overview of Health Risks and Benefits of Alcohol Consumption. Alcohol Clin Exp Res 1998;22;7:285S-298S
- 20 Injuries Farley
Readings: Wallace 1021-1023, 1027-1028; Rivara, Grossman, and Cummings. NEJM 337;8:543-548 and 613-618
- 21 Exam Module 2
- 22 Chemical agents Lichtveld
Reading: Frumkin, Environmental Health- From Global to Local; chapter 2- Toxicology
MODULE 3 – Chemical, Physical and Biological Agents of Disease
- 22 Physical agents Lichtveld
Reading: Frumkin, Environmental Health- From Global to Local; chapter 24- Radiation <http://www.testproducts.com/radon/myths.html>,
http://testproducts.com/safecart/product_info.php/cPath/27/products_id/35,
http://testproducts.com/safecart/product_info.php/cPath/27/products_id/29,
http://testproducts.com/safecart/product_info.php/cPath/27/products_id/41,
<http://testproducts.com/radon>, <http://testproducts.com/safecart/index.php/cPath/27>
- 22 H5N1, SARS and other respiratory infections Lichtveld
Readings: Influenza:
<http://www.cdc.gov/ncidod/EID/vol11no02/04-1061.htm>
<http://www.cdc.gov/ncidod/EID/vol12no04/05-1427.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5305a1.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5507a5.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm55e203a1.htm>
SARS:
<http://www.cdc.gov/ncidod/EID/vol10no2/03-0741.htm>
<http://www.cdc.gov/ncidod/EID/vol10-no2/03-0610.htm>
<http://www.cdc.gov/ncidod/EID/vol11no12/04-0949.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5249a2.htm>
- 27 Malaria and Tuberculosis Lichtveld
Readings: TB:
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5105a1.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5325a3.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5402a6.htm>
Malaria:

- <http://www.cdc.gov/ncidod/EID/vol11no09/pdfs/05-0337.pdf>
<http://www.cdc.gov/ncidod/EID/vol11no03/pdfs/04-0677.pdf>
<http://www.cdc.gov/ncidod/EID/vol6no2/pdf/martens.pdf>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5238a3.htm>
- 27 Gastrointestinal infections and diarrheal diseases Lichtveld
Readings: <http://www.cdc.gov/ncidod/EID/vol9/no5/02-0562.htm>
<http://www.cdc.gov/ncidod/EID/vol7no3/swaminathan.htm>
- 27 HIV/AIDS and other Sexually Transmitted Diseases Lichtveld
Readings: <http://www.cdc.gov/ncidod/EID/vol10no11/04-0252.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/00018871.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5505a1.htm>
- 28 Infectious agents as Weapons of Mass Destruction Lichtveld
Readings: <http://www.cdc.gov/ncidod/EID/vol8no10/pdf/02-0353.pdf>
<http://www.cdc.gov/ncidod/EID/vol9no11/03-0339.htm>
<http://www.cdc.gov/ncidod/EID/vol9no11/03-0339.htm>
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5246a5.htm>
- 28 Ethical, policy and legal issues of disease Lichtveld
Readings: http://www.sphereproject.org/handbook/hdbkpdf/hdbk_c1.pdf
<http://www.lasvegassun.com/sunbin/stories/editorials/2006/mar/17/566709018.html>
NEJM, Vol. 353 (10). Sep 8, 2005.1008-1020
<http://www.phls.org/products.htm>
- 29 Exam Module 3