

**MBNA-103 FINAL PROGRAM 2014-2015** *Multidisciplinary Approach to Understand Genetic and Cellular Basis,  
Diagnosis and Treatment of Acquired and Genetic Human Disease*

The course will include lectures 2-3 hours long and student presentations on assigned topics. Grade will be based on student presentations and oral or written exams on individual topics.

**Coordinator: Vassilis I. Zannis (Tel.: 2810 394553 E: vzannis@bu.edu)**

*\*Reading: refer to Metabolic & Molecular Bases of Inherited Disease (8<sup>th</sup> Edition)*

Date	Time	Instructor	Topic	Reading
1/10	9-12 (new date not confirmed)	E. Dafnis TA : Not available. Ms Adamaki will oversee the availability projector	<i>Tutorial:</i> Physiology and Pathophysiology of the renal system; Take home questions are given to the class by the instructor due on 6/10 (part 1).	
	2-4:00	S. Schiza	<i>Tutorial:</i> Physiology and Pathophysiology of the pulmonary system; Take home questions are given to the class by the instructor due on the 25th	
2/10 7A-0.1	1-3:00	M. Marketou TA: Not available. Ms Adamaki will oversee the availability projector	<i>Tutorial:</i> Physiology and Pathophysiology of cardiovascular disease; Take home questions are given to the class by the instructor due on 6/10.	
3/10 7A-0.1	3-5:00	I. Zaganas TA: Not available. Ms Adamaki will oversee the availability projector	<i>Tutorial:</i> Physiology and Pathophysiology of the Nervous System, Take home questions are given to the class by the instructor due on the 6/10.	
6/10 7A-0.1	9-12;  1-2	V. Zannis TA: Mplanas	Biochemistry and genetics of lipoproteins: The enzymes, lipid transfer proteins, lipoprotein receptors, and lipid transporters implicated in lipoprotein metabolism: Genetic diseases associated with lipoprotein abnormalities and the pathogenesis of atherosclerosis. Basic principles on the use of animal models, bone marrow transplantation and gene therapy for the study of proteins involved in lipid homeostasis and atherogenesis <i>A review article Lipoproteins and Atherogenesis (Ch. 8; Molecular Mechanisms of Atherosclerosis, J. Loscalzo, ed. 2004 Taylor &amp; Francis, NY) has been handed out to you in advance. Please read it prior to the lectures.</i> <i>Assignment of research papers</i> on lipoproteins, atherosclerosis, insulin signaling and diabetes to be presented later in the course.	Metabolic Basis chapter 114-122* & Notes
7/10 7A-0.1	9-12	V. Zannis TA: Mplanas	Role of apoE in cholesterol and triglyceride homeostasis and the biogenesis of HDL Role of transporters of sterols, phospholipids and bile acids in the overall cholesterol and bile homeostasis	Notes

8/10 7A-0.1	9-12;	V. Zannis TA: Mplanas	HDL & its biological functions: Role of apoA-I, the HDL receptor (SR-BI) and the ABCA1 lipid transporter: Lessons from human patients & experimental animals. <i>Assignment of a topic for a term paper (critical review) in the form of a review covering the knowledge of the past two years on a specific protein that is associated with diseases of cholesterol or bile acid metabolism. Dr. Zannis will provide guidance. Based on Dr. Zannis' instructions, each student will write a review and present it to the class later in the course. First year students may also receive advice from students of previous years.</i>	Notes Metabolic Basis chapter Ch. 67-69* 144-122 & Notes
9/10 7A-0.1	9-12	Student presentation of original papers and reviews on Lipoproteins TA: Not available. Ms Adamaki will oversee the availability projector	2 <sup>nd</sup> yr student presentations on lipoprotein papers: Vasarmidi&Mplanas 2 <sup>nd</sup> & 3 <sup>rd</sup> yr student presentations: lipoprotein reviews: Kalafatakis (GPIHBP1)&Papaioannou (NPC1L1) &Pantazi(ANGPTL3)	
10/10 7A-0.2	9-11:00 After 11:00		<b>Exam on Lipoproteins (Zannis' Lectures)</b> Preparation for the presentation on the first original paper to be given on 13/10 *Dr.Zannis will be available for guidance	
12/10 & 13/10	10:00-15:30		Symposium on Inflammatory Networks in Health and Disease  Organizers: Aris Eliopoulos, Greece & Christos Tsatsanis, Greece  Invited speakers: V. Andreacos Greece, T. Chavakis Germany, C. Franceschi Italy, D. Kardassis Greece, D. Kontoyiannis Greece, A. Mantovani Italy, A. Nebreda Spain, P. Tsihchlis USA	
14/10 7A-0.1	9-10:30	V. Zannis TA: Skordos	Introduction to Diabetes	Metaboli c Basis chapter 114-122* & Notes
7A-04	11:00-17:00	V. Zannis	<b>Presentation of 1st set of research papers of 1st year students: Lipoprotein/arthrosclerosis, 20 min/student</b> <i>Instructors are required to make comments on how the presentation could be improved.</i>	
15/10 7A-0.1	9-12	E. Fisher TA: Papaioannou	The innate immune system and its relationship to atherosclerosis	
16/10 7A-0.1	13:00-15:00	E. Fisher TA: Papaioannou	The regression of atherosclerosis and the impact of diabetes mellitus and HDL functionality The pathogenesis of atherosclerosis	

17/10 7A-0.2	9-12	E. Fisher TA: Papaioannou	The pathogenesis of atherosclerosis	
20/10 7A-0.1	9-10.30 1-3:30	E. Dafnis	<b>Exam on Fisher's Lectures</b> Tutorial: Physiology and Pathophysiology of the renal system (part 1); Take home questions are given to the class by the instructor due on 27/10	
21/10 7A-0.1	9:00-12:00 13:00-15:00	E. Dafnis Kandror TA: Vasarmidi	Tutorial: Physiology and Pathophysiology of the renal system (part 2); Take home questions are given to the class by the instructor due on 27/10  Insulin Signaling	
22/10 7A-0.1	9-12	Kandror TA: Varsamidi	Insulin Resistance	
23/10 7A-0.1	13:00-15:00	Kandror TA: Vasarmidi	Regulation of lipolysis by insulin	
24/10 7A-0.1	9:30-10:30 11:00-13:00	S. Mavridou Tsatsanis TA: Skordos	Diabetes  Insulin signaling and the metabolic syndrome	<i>Papers/Reviews/notes</i>
27/10 7A-0.1	9-10:30 11-12:30 12:30-1:30 1:45-2:45	D. Logothetis TA: P. Pantazi	<b>Exam on Tsatsanis' and Kandror's Lectures</b> Membrane Potential - Ion Movement: Forces and Measurement Mechanisms of Selectivity, Permeation and Gating Student Paper Presentations	<i>Papers/Reviews/notes</i>
29/10 7A-0.1	9-12.30	D. Logothetis TA: P. Pantazi	Voltage-Gated Ion Channels and the basis of the Action Potential Propagation of the action potential Student Paper Presentation & Problem Set 1	<i>Papers/Reviews/notes</i>
30/10 7A-0.1	9-12.30	D. Logothetis TA: P. Pantazi	Synaptic transmission and extracellular ligand-gated channels G protein signaling and intracellular ligand-gated channels Student Paper Presentation & Problem Set 2	<i>Papers/Reviews/notes</i>
31/11 7A-0.1	9-12.30	D. Logothetis TA: P. Pantazi	Channelopathies Student Paper Presentations	<i>Papers/Reviews/notes</i>
3/11 7A-0.1	9-10:30; 11-1:30		<b>Exam on Logothetis' Lectures</b> 2 <sup>nd</sup> yr student presentations on obesity and diabetes papers: Skordos&Kamaratou&Trakaki 2 <sup>nd</sup> and 3 <sup>rd</sup> yr student presentations on obesity and diabetes reviews: Mplanas&Papaioannou	

4/11 7A-0.1	9-12	Kardassis, Papakonstanti, Tsatsanis, Goulielmos, Sourvinos	Presentation of 2nd set of research papers of 1st year students on the subjects of Obesity and Diabetes, 15 min/student	
5/11 7A-0.1	9-12 1-3:30	Fanouriakis TA: Skordos Tsatsanis TA: Kamaratou	Type I Diabetes Mellitus: Cellular and Clinical Perspectives Take home questions are given to the class by the instructor due on the 12th Instructions on how to write a comprehensive critical review and avoid copying existing text.	Papers/Reviews/notes
6/11 7A-0.1	9-12	P. Hatzis TA: Trakaki	Wnt Regulated non-coding RNAs and signaling in the mammalian intestine	
7/11 7A-0.1	9-12	P. Hatzis TA: Trakaki	Wnt Regulated non-coding RNAs and signaling in the mammalian intestine	
10/11			Preparation for the first review topic on lipoproteins and atherosclerosis *Dr Kardassis and Tsatsanis available for guidance in their office 9-11	
12/11 7A-0.1	9-10.30 12:00-13:00	J. Iliopoulos Tele-Conference Room	<b>Exam on Hatzis' Lectures</b>  How to detect plagiarism in the review  Continue preparation for the for the first review topic on lipoproteins and atherosclerosis.	
13/11 7A-0.1	9-12 1-3:30	-	Presentation of the first review topic on lipoproteins and atherosclerosis.	
14/11		-	Preparation for the second review topic on Diabetes/Obesity *Dr Kardassis and Tsatsanis available for guidance in their office 9-11	
17/11 7A-0.1	9-12	Kostourou TA: Kamaratou	Molecular Mechanisms of Vascular Morphogenesis	
18/11 7A-0.1	9-12	Kostourou TA: Kamaratou	Molecular Mechanisms of Vascular Morphogenesis	
19/11			Continue preparation for the second review topic on Diabetes/Obesity	
20/11			Continue preparation for the second review topic on Diabetes/Obesity	

21/11 7A-0.1	9-12 1-3	Kardassis, Papakonstanti, Tsatsanis, Goulielmos, Sourvinos	Presentation of the second review topic on Diabetes/Obesity	
24/11	9-10 10:30	Moschandreou	Exam on Kostourou's Lectures Statistics Course Commences	