MEDICAL PHYSIOLOGY 1 AND 2 INTD (MPHY) 572 & 573

Prerequisites: Basic cell biology (*e.g.* INTD-531) & biochemistry (*e.g.* INTD-571) or equivalent. **Course Administrator** for D clearance: Jim Lee (KAM 409) <u>jim.lee@med.usc.edu</u>

PHYSIOLOGY is the study of the functions and activities of life and living matter at all levels of organization within an organism. While physiology research frequently involves the study of cellular and molecular mechanisms, the tradition of the discipline requires consideration of all homeostatic and developmental functions of the organism. This tradition leads to a valuable perspective for medical research.



MEDICAL PHYSIOLOGY 1 AND 2 provide a graduate level analysis of organism functions during health and disease and the challenge of diagnosis and therapy. The courses may be taken in either order. Study materials include faculty-generated handouts and PowerPoint files posted online. For each section of a course there is an in-class examination. There is no final comprehensive examination.

MEDICAL PHYSIOLOGY 1 INTD (MPHY) 572 is a Fall Term course.

Course Director: Herbert Meiselman, Dept. Physiology & Biophysics, <u>hmeiselman@gmail.com</u>

Medical Physiology I provides a graduate level analysis of the Reproductive, Muscle, Cardiovascular, Respiratory, and Renal systems. Specific topics are shown in the schedule of class sessions, held 1-3 PM on Mondays and Thursdays.

MEDICAL PHYSIOLOGY 2 INTD (MPHY) 573 is a Spring Term course.

Course Director: Harvey Kaslow, Dept. Physiology & Biophysics, hrkaslow@usc.edu

Medical Physiology 2 provides a graduate level analysis of the Endocrine, Nervous, Immunology, and GI-Liver systems. Specific topics are shown in the schedule of class sessions, held 9-11 AM on Wednesdays and Fridays.

MPHY 572 INTD 572 Fall 2015 – Medical Physiology I Monday and Thursday, 1:00-3:00 PM, McKibben Room 256

This course is one of the two core classes for Physiology & Biophysics and is part of the MPHY 572, 573 series; the classes can be taken in either order. Course Director: Herbert Meiselman meiselma@usc.edu D clearance: http://resadv.usc.edu/Dclearance, Username: "student", Password: "Trojans1" Class materials (handouts, .ppt, readings) posted on USC Blackboard in advance. No required medical physiology textbook (there are many good ones)

Session/section	Date 1:00-3:00	Lecturer/email	Торіс
1-Reproduction	Mon, Aug 24	R. Wood, CNB	Reproductive Physiology - I
		riw@usc.edu	
2-Reproduction	Thurs, Aug 27	R. Wood, CNB	Reproductive Physiology - II
		riw@usc.edu	
3- Muscle section Mon, Aug 31		RA Farley, PHBI	Muscle basics
		rfarley@usc.edu	Smooth and striated
4-Muscle section	Thurs, Sept 3	T. Schroeder, Biokin & PT	Muscle mechanics and training
		eschroed@usc.edu	
LABOR DAY	Mon, Sept 7	No Class	
5-Muscle section	Thurs, Sept 10	RA Farley, PHBI	Neuromuscular transmission and diseases
6- Muscle exam	Mon , Sept 14	Exam 1	Reproduction and Muscle section
7-Cardiovascular	Thurs, Sept 17	RA Farley, PHBI	Electrical excitability of the heart
8-Cardiovascular	Mon, Sept 21	HJ Meiselman, PHBI	Cardiac cycle
		meiselma@usc.edu	
9-Cardiovascular	Thurs, Sept 24	HJ Meiselman, PHBI	Cardiac mechanics
10-Cardiovascular	Mon, Sept 28	HJ Meiselman, PHBI	Microcirculation
11-Cardiovascular	Thurs, Oct 1	HJ Meiselman, PHBI	CV Control
12-Cardiovascular	Mon, Oct 5	R. Matthews, Cardiology	Interventional cardiology
		raymatth@med.usc.edu	
13-Cardiovascular	Thurs, Oct 8	M. Bowdish, Surgery	Surgical approaches to CV problems
		Michael.Bowdish@med.	
		usc.edu	
14-Cardiovascular	Mon, Oct 12	J. Wood, CHLA	Fetal circulation, Congenital heart disease
		jwood@usc.edu	
15 CV avam	Thurs Oct 15	Evam 2	Cardiovascular Section
15- CV exam	111013, 00013		Cardiovascular Section
16-Respiratory	Mon, Oct 19	T. Keens, CHLA tkeens@chla.usc.edu	Intro to respiration, Diffusion and gas exchange
16-Respiratory	Mon, Oct 19 Thurs, Oct 22	T. Keens, CHLA tkeens@chla.usc.edu T. Keens, CHLA	Intro to respiration, Diffusion and gas exchange Gas exchange, V/Q, Mechanics
16-Respiratory 17-Respiratory 18-Respiratory	Mon, Oct 19 Thurs, Oct 22 Mon, Oct 26	T. Keens, CHLA tkeens@chla.usc.edu T. Keens, CHLA T. Keens, CHLA	Gas exchange, V/Q, Mechanics Mechanics, Pulmonary circulation, Host defense
16-Respiratory 17-Respiratory 18-Respiratory 19-Respiratory	Mon, Oct 19 Thurs, Oct 22 Mon, Oct 26 Thurs, Oct 29	T. Keens, CHLA tkeens@chla.usc.edu T. Keens, CHLA T. Keens, CHLA T. Keens, CHLA	Intro to respiration, Diffusion and gas exchange Gas exchange, V/Q, Mechanics Mechanics, Pulmonary circulation, Host defense Ventilatory muscles, control of breathing, sleep and breathing
16-Respiratory 17-Respiratory 18-Respiratory 19-Respiratory 20-Respiratory	Mon, Oct 19 Thurs, Oct 22 Mon, Oct 26 Thurs, Oct 29 Mon, Nov 2	T. Keens, CHLA tkeens@chla.usc.edu T. Keens, CHLA T. Keens, CHLA T. Keens, CHLA B. Zhou, Dept. Medicine	Intro to respiration, Diffusion and gas exchange Gas exchange, V/Q, Mechanics Mechanics, Pulmonary circulation, Host defense Ventilatory muscles, control of breathing, sleep and breathing Alveolar epithelial cells, ER stress and pulmonary fibrosis
16-Respiratory 17-Respiratory 18-Respiratory 19-Respiratory 20-Respiratory	Mon, Oct 19 Thurs, Oct 22 Mon, Oct 26 Thurs, Oct 29 Mon, Nov 2	T. Keens, CHLA tkeens@chla.usc.edu T. Keens, CHLA T. Keens, CHLA T. Keens, CHLA B. Zhou, Dept. Medicine bzhou@usc.edu	Intro to respiration, Diffusion and gas exchange Gas exchange, V/Q, Mechanics Mechanics, Pulmonary circulation, Host defense Ventilatory muscles, control of breathing, sleep and breathing Alveolar epithelial cells, ER stress and pulmonary fibrosis
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Location:	Sc	hed	ule for S	Spring 2016 as of:	13-Aug-2015	MPHY 573: Medical Physiology
???		9-11 AM date		lecturer	topic	
			Mon	11-Jan-2016	Spring term begins	
Homeostasis,	1	1	Wed	13-Jan-2016	Youn	Homeostasis and Feedback and Feedforward Control
	2	2	Fri	15-Jan-2016	Kaslow	Basic Pharmacokinetics
	3	3	Wed	20-Jan-2016	Kaslow	Principles of signaling and endocrinology
	4	4	Fri	22-Jan-2016	Kaslow	Energy & organic matter balance, obesity
kinetics, and	5	5	Wed	27-Jan-2016	Kaslow	Adrenal, Thyroid, Pituitary -1
Endocrinology	6	6	Fri	29-Jan-2016	Kaslow	Adrenal, Thyroid, Pituitary -2
	7	7	Wed	3-Feb-2016	Kaslow	CaPO4, review
	8	8	Fri	5-Feb-2016	Buchanan	Diabetes
	9	9	Wed	10-Feb-2016	ENDO - REPRO EXAM	1
Immunology	10	1	Fri	12-Feb-2016	McMillan	 Introduction to the Immune System; Innate Immunity
	11	2	Wed	17-Feb-2016	McMillan	 Antigen Capture & Presentation to Lymphocytes; Antigen Recognition in the Adaptive Immune System
	12	3	Fri	19-Feb-2016	Akbari	 Cell-Mediated Immune Responses; Effector Mechanisms of Cell-Mediated Immunity
	13	4	Wed	24-Feb-2016	McMillan	 7. Humoral Immune Responses; 8. Effector Mechanisms of Humoral Immunity
	14	5	Fri	26-Feb-2016	McMillan	9. Immunological Tolerance and Autoimmunity Vaccines
	15	6	Wed	2-Mar-2016	Hofman Kaslow	Apoptosis Mechanisms and the Immune Response Cancer Immunotherapy
Nervous System	16	1	Fri	4-Mar-2016	Garner	Overview of the CNS
Immunology	17	7	Wed	9-Mar-2016	IMMUNO EXAM	
Nervous System	18	2	Fri	11-Mar-2016	Garner	Basic Neurophysiology
			Wed	16-Mar-2016	Spring Break	March 16 - 21
			Fri	18-Mar-2016	Spring Break	March 17 - 22
	19	3	Wed	23-Mar-2016	Hinton	CNS Cell and Tissue Response to Injury
	20	4	Fri	25-Mar-2016	Garner	Motor Systems
	21	5	Wed	30-Mar-2016	Garner	Sensory Physiology (including retina)
	22	6	Fri	1-Apr-2016	Weiland	Physiology of the Retinal Prosthesis
	23	7	Wed	6-Apr-2016	NEURO EXAM	
GI - Liver	24	1	Fri	8-Apr-2016	Tsukamoto	Liver: Cell Biology
	25	2	Wed	13-Apr-2016	Tsukamoto	Metabolic Liver Diseases
	26	3	Fri	15-Apr-2016	Saito	GI Diseases
	27	4	Wed	20-Apr-2016	Asahina	Liver Fibrosis and Regeneration
	28	5	Fri	22-Apr-2016	Feldman	Liver Cancer and Cancer Stem Cells
	29	6	Wed	27-Apr-2016	Pandol (UCLA)	Pancreas Physiology and Diseases
	30	7	Fri	29-Apr-2016	Said (UCI)	focus on Water-Soluble Vitamins
			Wed	4-May-2016	Study Days Period	May 2-5
	31	8	Fri	6-May-2016	GI-LIVER EXAM	http://classes.usc.edu/term-20161/finals/