

Syllabus 2021

PHOL 482

Medical Physiology II

Block 5 – Respiratory Physiology

Block Coordinators: Dr. Walter F. Boron
(E-524; walter.boron@case.edu 216-368-8978)
Dr. Andrea Romani
(E-528; andrea.romani@case.edu 216-368-1625)
10:00am – 12:00am; E-501

Week 1

Mon 2/1/21 Dr. Boron Chapter 26: Organization of the Respiratory System (590-605)
Tue 2/2/21 Dr. Boron Chapter 27: Mechanics of Ventilation (606-627)
Wed 2/3/21 *Translational*: Richard Martin “Developmental Respiratory Physiology”
Thu 2/4/21 Dr. Boron Chapter 28: Acid-Base Physiology (628-646)
Fri 2/5/21 *Translational*: Frank Jacono “Pulmonary Pathophysiology: Clinical Correlations”

Week 2

Mon 2/8/21 QUIZ - Dr. Boron Chapter 29: Transport of Oxygen and Carbon Dioxide in the Blood (647-659)
Tue 2/9/21 Dr. Boron Chapter 30: Gas Exchange in the Lungs (660-674)
Wed 2/10/21 (10:00 – 11:00 am) Michael Decker: RESEARCH SEMINAR
Thu 2/11/21 Dr. Boron Chapter 31: Ventilation and Perfusion of the Lungs (675-699)
Fri 2/12/21 **(10:00 – 11:00 am) Michael Decker: RESEARCH SEMINAR**

Week 3

Mon 2/15/21 QUIZ- Dr. Boron Chapter 32: Control of Ventilation (700-720)
Tue 2/16/21 *Translational*: Andrea Romani “Obstructive & Restrictive Lung Disease”
Wed 2/17/21 (2:30-3:30) Open Forum with Dr. Romani
Thu 2/18/21 Study Day – No Class
Fri 2/19/21 **Block 5 Exam**

Syllabus 2021

PHOL 482 Medical Physiology

Block 6 – Gastrointestinal System + Metabolism

Room E501 10:00 – 12:00 a.m.

Block Coordinator: Dr. William Schilling
(E508; william.schilling@case.edu, off. 216-368-8938)
Michael Wolfe MD mwolfe@metrohealth.org
William Schilling PhD william.schilling@case.edu
Theresa Pizarro PhD theresa.pizarro@case.edu

Colleen Croniger PhD cmc6@case.edu
Erica Roesch, MD Erica.Roesch@uhhospitals.org
Andrea Romani MD, PhD andrea.romani@case.edu
Katarina Greer, MD Katarina.Greer@UHHospitals.org

Chapter and pages refer to B&B 3rd ed.

Week 1

Mon 2/22/21 Dr. Schilling: Overview of GI structure/function, motility and regulation
(ENS, AS, GI hormones, biogenic amines)
Reading: Chapter 41, + pp.565-569 The splanchnic organs +
pp. 876-878 Filling/emptying of the stomach

Tues 2/23/21 M.Wolfe MD Gastric Function: Reading = Chapter 42

Wed 2/24/21 12 -1 pm M. Wolfe, MD – research

Thur 2/25/21: Translational lecture Michael Wolfe, MD
Gastric acid secretion and ulcer disease
Reading: ML SCHUBERT, DA PEURA Control of Gastric Acid Secretion in Health and Disease
GASTROENTEROLOGY 2008;134:1842–1860
JA GOLDMAN et al. False-Positive Secretin Stimulation Test for Gastrinoma Associated With the Use of
Proton Pump Inhibitor Therap. CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2009;7:600–602

Fri 2/26/21 Dr. Schilling: Pancreas and Salivary Glands; Bile; Reading: Chapter 43 + pp.960-962 Cholangiocyte
and Gall Bladder

Week 2

Mon 3/1/21 Quiz: Dr. Schilling Intestinal Fluid and Electrolyte Movement & Nutrient Digestion and
Absorption (except lipid)
Reading: Chapter 44/45

Tues 3/2/21 Dr. Schilling; Lipid Digestion/Absorption
Reading: Primer of physical states of lipids.pdf + Bile formation/Enterohepatic Circulation pp.958-
964

Wed 3/3/21 NO CLASS

Thur 3/4/21 Dr. De Salvo – Immunology of the GUT

Fri 3/5/21 12 -1 pm T. Pizarro, PhD – research : Crohn’s Disease and UC

Week 3

Mon 3/8/21 Quiz
Dr. Croniger Carbohydrate metabolism
Reading: Chapter 58: Carbohydrate metabolism +
Crash Course: Metabolism and Nutrition, 4th ed. Chapter 4

Tues 3/9/21 Dr. Croniger Lipid metabolism
Reading: Chapter 58: Lipid Metabolism +
Crash Course: Metabolism and Nutrition, 4th ed. Chapter 5

Wed 3/10/21 *Translational Lecture* Erica Roesch MD
Cystic Fibrosis and Clinical Management of Nutrition
Reading: GS Montgomery, M Howenstine Cystic Fibrosis Pediatrics in Review 2009;30;302
A Munck Nutritional considerations in patients with cystic fibrosis Expert Rev Resp Med 4:42-56, 2010

Wed 3/10/21 -1 pm C. Croniger PhD – research

Thu 3/11/29 Dr. Romani Hepatobiliary Functions
Reading: Chapter 46:

Fri 3/12/21 *Translational Lecture* Katarina Greer, MD
Pathophysiological consequences of Liver Cirrhosis
Reading: G Garcia-Tsao, J Bosch Management of Varices and Variceal Hemorrhage in Cirrhosis N Engl J Med 2010;362:823-32.
M Roessle, AL Gerbes TIPS for the treatment of refractory ascites, hepatorenal syndrome and hepatic hydrothorax: a critical update. Gut 2010;59:988e1000

Week 4

Mon 3/15/21 Quiz Dr. Romani: Liver as a Metabolic Organ
Reading: Chapter 46

Tue 3/16/21 *Translational Lecture* Dr. Romani: Metabolic Syndrome

Tue 3/16/21 12 -1 pm Dr. Romani – research: Alcoholism

Wed 3/17/21 NO CLASSES – STUDY DAY

Thur 3/18/21 NO CLASSES – STUDY DAY

Fri 3/19/21 **Block Exam**

EXTRA

Translational Lecture Michael Wolfe, MD The GI Tract and Its Role in Obesity: An Example of Translational Research

Reading: MO Boylan, PA Glazebrook, M Tatalovic, and MM Wolfe. Gastric inhibitory polypeptide immunoneutralization attenuates development of obesity in mice . Am J Physiol Endocrinol Metab 309: E1008–E1018, 2015.

Wolfe MM, Boylan MO. Obesity and the GI Tract: You are what you eat. J. Clin Gastroenterol 2014;48:817-822.

Integration of GI Functions

Reading: Regulation of Body Mass pp.1000-1005

Dr. Croniger Carbohydrate + Lipid Metabolism continued

Syllabus 2021

PHOL 482

Block 7 - Endocrinology and Reproductive System

Room E501 10:00 – 12:00 a.m.

Block Coordinator: Dr. Andrea Romani

(E528: amr5@po.cwru.edu; off: 217-368-1625)

WEEK 1

| | | | |
|-----|-----------|------------|---|
| Mon | 3/22/2021 | Dr. Romani | Organization of Endocrine Control (Ch. 47) |
| Tue | 3/23/2021 | Dr. Romani | Adrenal Gland -Cortical Hormones (Ch. 50) |
| Wed | 3/24/2021 | Dr. Romani | Adrenal Gland -Medullary Hormones (Ch. 50) |
| Thu | 3/25/2021 | Dr. Shuen | <u>Research Seminar:</u> Mechanisms of secretion in Chromaffine cells |
| Fri | 3/26/2021 | Dr. Romani | <u>Translational Class:</u> CUSHING |

WEEK 2

| | | | |
|-----|-----------|------------------------|---|
| Mon | 3/29/2021 | Dr. Croniger | Leptin and Adiponectin |
| Tue | 3/30/2021 | QUIZ Dr. Dubyak | Endocrine Pancreas: Insulin & Glucagon (Ch.51) |
| Wed | 3/31/2021 | Dr. Romani | <u>Research Seminar:</u> Role of 11 β -HSD1 in the hepatocyte |

| | | | |
|-----|----------|------------|--|
| Thu | 4/1/2021 | Dr. Romani | Thyroid Gland (Ch. 49) |
| Fri | 4/2/2021 | Dr. Romani | <u>Translational Class</u> : DIABETES |

WEEK 3

| | | | |
|-----|----------|------------------------|--|
| Mon | 4/5/2021 | QUIZ Dr. Romani | Growth Hormone & Body Mass (Ch. 48) |
| Tue | 4/6/2021 | Dr. Romani | Bone Metabolism; PTH, Vit. D (Ch. 52) |
| Wed | 4/7/2021 | Dr. Romani | Male Reproductive System (Ch. 54) |
| Thu | 4/8/2021 | Dr. Romani | Female Reproductive System (Ch. 55) |
| Fri | 4/9/2021 | Dr. Romani | <u>Translational Class</u> : ECLAMPSIA & ED |

WEEK 4

| | | | |
|-----|-----------|-------------------------|---|
| Mon | 4/12/2021 | QUIZ Dr. Mesiano | Sexual Differentiation (Ch. 53) |
| Tue | 4/13/2021 | Dr. Mesiano | Fertilization, Pregnancy & Lactation (Ch. 56) |
| Wed | 4/14/2021 | Dr. Mesiano | Fetal & Neonatal Physiology (Ch. 57) |
| Wed | 4/14/2021 | Dr. Romani | <u>Translational Class</u> : ENDOMETRIOSIS |
| Thu | 4/15/2021 | STUDY DAY | |
| Fri | 4/16/2021 | BLOCK EXAMS | |

Syllabus 2021

Medical Physiology PHOL 482

Translational Physiology PHOL 484

Block 8 – Physiology of Everyday Life

Block Coordinator: Dr. Michael Decker, Robbins E510; mjd6@case.edu

Block Co-Coordinator: Dr. Joseph C. LaManna, Robbins E611; JCL4@case.edu

10:00 am to 12:00 noon in E501

Teaching Assistants: Med.: amb388@case.edu Trans. – Janani.ramachandran@case.edu

Week 1

| | | | |
|-------|---------|-------------|--|
| Mon | 4/19/21 | Dr. Decker | Chapter 61: Environmental Physiology |
| Tues | 4/20/21 | Dr. Decker | <i>Translational Lecture: (USN and USAF work)</i> |
| Wed | 4/21/21 | Dr. Damato | Chapter 62: Aging |
| Thurs | 4/22/21 | Dr. Hornick | <i>Translational Lecture: Geriatrics/Aging Hornick</i> |
| Fri | 4/23/21 | Dr. Decker | <i>Translational Lecture Sleep and it Disorders</i> |

Week 2

Mon 4/26/21 Quiz: Dr. LaManna

Chapter 60: Exercise Physiology

Tues 4/27/21 Dr. Jenkins

Translational Lecture: Exercise Physiology

Wed 4/28/21 Dr. LaManna

Chapter 59: Regulation of Body Temperature

Thur 4/29/21 Study Day

Fri 4/30/21 Block Exam