The section is broken into two parts. Part One will include the Pharmacology and Endocrinology Lectures. Part Two will include the Cardiovascular/Respiratory/Renal Lectures and the Neuroscience Lectures. There will be one, in class exam on Friday, April 8.

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Part One Lecturers
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Lecture 1
Monday, Feb. 28, 9:00 - 10:00
Lecture Title: Drug Absorption
Lecturer: Dr. Joseph Baldassare
Suggested Reading: The Pharmacological Basis of Therapeutics- Goodman and Gilman, Chapter 1

Outline:
I. Absorption Physiochemical Factors in Drug Absorption
   A. Passive Diffusion:
      Lipid solubility
      Effect of pH
   B. Carrier Mediated Transport
      Facilitated transport
      Active transport
II. Drug Distribution and Storage
   A. Determination of body water compartments
   B. Binding to Albumin
   C. Volume of Distribution
Lecture 2
Monday, Feb. 28, 10:00 - 11:00 a.m.
Lecture Title: Molecular Basis for Drug Binding/Pharmacological Antagonism
Lecturer: Dr. Joseph Baldassare

Suggested Reading: The Pharmacological Basis of Therapeutics- Goodman & Gilman, Chapter 2

Outline:
Drug Receptor Theory
   A. Determination of Drug binding
      Competition binding
   B. Efficacy and Potency
   C Antagonism

Lecture 3
Tuesday, March 1, 9:00 - 10:00
Lecture Title: Drug Biotransformation
Lecturer: Dr. Thomas Westfall
Suggested Reading: Goodman and Gilman 10th Edition Chapter 1: p. 11-18 plus Handouts

Outline:
Drug Biotransformation and Excretion
   • Consequences of Biotransformation
   • Phase 1 Reactions
   • Phase 2 Reactions
   • Induction and Inhibition
   • Factors Influencing Drug Biotransformation
   • Excretion of Drugs

Lecture 4
Wednesday, March 2, 9:00 - 10:00
Lecture Title: Autonomics I
Lecturer: Dr. Thomas Westfall
Suggested Reading: Goodman and Gilman 10th Edition Chapter 6: p. 115-125 plus Handouts

Outline:
Anatomical and Physiological Considerations
   • Anatomy of the Autonomic Nervous System
   • Neurochemical Considerations
   • Physiological Considerations
Lecture 5
Thursday, March 3, 9:00 - 10:00
Lecture Title: Autonomics II
Lecturer: Thomas Westfall

Outline:
Cholinergic Neurotransmission
- Synthesis
- Storage
- Release
- Inactivation
- Receptor Activation

Lecture 6
Friday, March 4, 9:00 - 10:00
Lecture Title: Autonomics III
Lecturer: Dr. Thomas Westfall
Suggested Reading: Goodman and Gilman 10th Edition Chapter 6: p. 129-149 plus Handouts

Outline:
Adrenergic Neurotransmission
- Synthesis
- Storage
- Release
- Inactivation
- Receptor Activation

Lectures 7 and 8
Monday and Tuesday, March 14 and 15, 9:00 – 10:00
Lecture Title: Anterior and Posterior Pituitary Gland
Lecturer: Dr. Meghan M. Taylor
Reading assignment: The lecture handout

Learning Objectives:
1. Understand the basic anatomy and functions of the anterior and posterior pituitary.
2. Identify and understand the regulation of secretion and the major sites and mechanisms of action of GH, PRL, ACTH, TSH, LH and FSH.
3. Identify the major actions of vasopressin (a.k.a. antidiuretic hormone) and understand what normally controls its release.
4. Identify the major actions of oxytocin.
Lecture 9
Wednesday, March 16, 9:00 – 10:00
Lecture Title: Adrenal Physiology
Lecturer: Dr. Willis K. Samson
Reading assignment: The lecture handout
Suggested Reading: Suggested reading in preparation for lectures:
Chapter 14 The Adrenal Glands pp. 319-348

Chapter 59, ACTH; Adrenocortical Steroids and their Synthetic Analogs, pp. 1465-1484

Learning Objectives:
1. Recognize the functional anatomy of the adrenal glands.
2. Identify the regulation of hormone production from the adrenal cortex.
3. Detail the physiology of the glucocorticoids.
4. Recognize the clinical features of cortisol excess or deficiency.
5. Detail the physiology of the mineralocorticoids and adrenal androgens.
6. Identify the consequences of mineralocorticoid excess.
7. Understand adrenal medullary production of catecholamines and their major actions.

Lectures 10 and 11
Thursday and Friday, March 17 and 18, 9:00 – 10:00
Lecture Title: Glucose Homeostasis
Lecturer: Dr. Willis K. Samson
Reading assignment: The lecture handout.
Suggested reading in preparation for lecture:
Textbook of Endocrine Physiology, edited by JE Griffin and SR Ojeda, Oxford Press
5th edition, Chapter 16: Glucose, Lipid and Protein Metabolism, pp. 377-406

Learning objectives:
1. Recognize the physiological changes observed in the two stages of fuel metabolism: anabolism and catabolism.
2. Describe the metabolic changes of catabolism.
3. Describe the metabolic changes of anabolism.
4. Review glycogenolysis and gluconeogenesis.
5. Review lipolysis and ketogenesis.
6. Review proteolysis and gluconeogenesis.