

# LIFS 3040: ANIMAL PHYSIOLOGY CURRICULUM: SPRING TERM 2017

**COURSE INSTRUCTORS**  
**Prof. Andrew L. Miller (ALM)\***  
**Prof. Pingbo Huang (PH)**  
 \*Course Director

**Venue LTD, Time: Monday 4:30 – 5:50 pm; Friday 12 Noon – 1:20 pm**

**Recommended Text: "Animal Physiology - Mechanisms and Adaptations" 5<sup>th</sup> Edition by  
 Eckert, Randall, Burggren and French. W.H. Freeman & Co. ISBN 0-7167-3863-5**

Week	Date	Lecturer	Subject
1	3/2 (Fri)	ALM	An Introduction to Animal Physiology.
<b>Module I: Muscle and Movement (Chapter 10)</b>			
2	6/2 (Mon)	ALM	a. Structural basis of contraction. b. Sliding filament theory.
2	10/2 (Fri)	ALM	c. Cross-bridge function and the generation of force. d. Role of Ca <sup>2+</sup> in contraction.
3	13/2 (Mon)	ALM	e. Electromechanical coupling. f. Mechanical properties of contracting muscle.
3	17/2 (Fri)	ALM	g. Neural control of contraction. h. Modulation of muscle contraction.
4	20/2 (Mon)	ALM	i. Cardiac muscle.
4	24/2 (Fri)	ALM	j. Smooth muscle.
5	27/2 (Mon)	ALM	k. Sources of energy for muscle contraction.
<b>Class Revision Quiz on Module I</b>			

Week	Date	Lecturer	Subject
<b>Module VII: Digestion and Absorption (Chapter 15)</b>			
5	3/3 (Fri)	PH	a. Overview of the digestive system.
6	6/3 (Mon)	PH	b. Digestion (part I and part II).
6	10/3 (Fri)	PH	c. Absorption.

### Module II: The Heart & Circulation of the Blood (Chapter 12)

7	13/3 (Mon)	ALM	a. Introduction to the cardiovascular system (CVS). b. General plan of the circulatory system.
7	17/3 (Fri)	ALM	c. Functional morphology of the mammalian heart. d. Electrical activities of the heart. e. The ECG and impulse conduction.
8	20/3 (Mon)	ALM	f. Excitation and contraction coupling in cardiac muscle. g. Neural control of the heart. h. Cardiac cycles – the heart as a pump.

### Class Revision Quiz on Module II

Week	Date	
8	24/3 (Fri)	<b>MID-TERM EXAM</b> (In LTD: Only examined on Modules I to II: Worth 50% of overall marks)

Week	Date	Lecturer	Subject
<b>Module V: Physiology of the Nervous and Sensory Systems (Chapters 5, 6 &amp; 7)</b>			
9	27/3 (Mon)	PH	a. Cell biology of nerve cells.
9	31/3 (Fri)	PH	b. Physiology of nerve cells (Part I).
10	3/4 (Mon)	PH	c. Physiology of nerve cells (Part II).
10	7/4 (Fri)	PH	d. Properties of sensory systems.

Week	Date	Lecturer	Subject
<b>Module VI: The Endocrine System (Chapter 9)</b>			
11	10/4 (Mon)	PH	a. General concepts of the endocrine system. b. The chemistry of hormones. c. Mechanisms of hormone actions.
11	21/4 (Fri)	PH	d. Neuroendocrine system.
12	24/4 (Mon)	PH	e. Metabolic and developmental hormones.
12	28/4 (Fri)	PH	f. Hormones regulating water/electrolyte balance.
13	5/5 (Fri)	PH	h. Reproductive hormones.
13	8/5 (Mon)	PH	REVISION

**STUDY BREAK from 10<sup>th</sup> to 15<sup>th</sup> May, 2017**

**EXAM PERIOD from 16<sup>th</sup> to 27<sup>th</sup> May, 2017**

**(LIFS 3040 END OF TERM EXAM DATE to be announced.**

**END of TERM Exam will ONLY cover Modules V to VII:  
Worth 50% of overall marks)**