

University of Oregon  
Department of Biology

**Course:** Introduction to Human Physiology, BI 121, 04 cr (CRN 40393) 09:00-10:50 MTWR (16 PAC) + TR Lab (130 HUE): 12:00-12:50 (CRN 40394) or 13:00-13:50 (CRN 40395), Summer 2013.

**Website:** <http://biology.uoregon.edu/classes/bi121sum13/>

**Prior Websites:** <http://biology.uoregon.edu/classes/bi121sum12/> (last summer, most synchronous)  
<http://biology.uoregon.edu/classes/bi121f12/> (last fall, most recent & up-to-date)

**Lecturer; Office; Hours; Phone; E-Mail:** V. Pat Lombardi; 73A Klamath (KLA); by appointment;  
541-346-4536 (office/message); [lombardi@uoregon.edu](mailto:lombardi@uoregon.edu)

**Lab Assistants; Office; Hours; Phone; E-Mail:** Tony Yang; 130 HUE; TBA; 541-346-4536; [anthony@uoregon.edu](mailto:anthony@uoregon.edu)

**Required Texts:** Chiras, Daniel D. (DC). *Human Body Systems: Structure, Function and Environment*, 2<sup>nd</sup> ed. or 1<sup>st</sup> ed. Burlington, MA: Jones and Bartlett Learning, 2013.

Lombardi VP, Evonuk E & Carmack MA (LM). *BI 121, Introduction to Human Physiology, Laboratory Manual, Summer 2013* at U of O Bookstore.

**1<sup>o</sup> Reserve Texts:** Supplemental readings listed in [ ] below:

**NB:** Copies on reserve in Science Library, 2 hr reserve only.

Sherwood, Lauralee (LS). *Fundamentals of Human Physiology*, 4<sup>th</sup> ed. Belmont, CA: Brooks/Cole, Cengage Learning, 2012, ISBN-13:0840062253.

Sizer, Frances S. & Whitney, Eleanor N. (S&W). *Nutrition: Concepts & Controversies*, 12<sup>th</sup>, 11<sup>th</sup> or 10<sup>th</sup> ed. Belmont, CA: Brooks/Cole, Cengage Learning, 2010, 2008 or 2006 (Copies on reserve in Science Library, 2hr NC).

+see many supplemental reserved texts/resources in Science Library or web listing:

<http://libweb.uoregon.edu/> click **Course Reserves** tab, then type in *Lombardi*

**Tentative Outline:**

- Jun 24 (M) **Lecture 1.** I. Introduction (outline, text, grading, expectations, etc.); Introduction to Human Physiology; Body Levels of Organization. II. Homeostasis. **Readings:** pp v-viii; *Module 1*, pp 1-8 (DC). [*Dedication, Brief Contents, Contents, Preface, xxi-xxvi; ch 1 vignette p 0, ch 1 pp 1-17* (LS)] (16 PAC).
- Jun 25 (T) **Lecture 2.** I. Connections: Homeostasis. Negative vs. Positive Feedback; Homeostatic Balance Examples; Simplified Homeostatic Model. II. Cell Anatomy, Physiology & Compartmentalization: Size; Basic Survival Skills; Begin Organelles. **Readings:** [ch 2, pp 18-27 (LS)] (16 PAC).
- Jun 25 (T) **Lab 1:** Histology, Microscopic Study of Tissues. **Readings:** pp i-iii, 1-1 to 1-4 (LM) (130 HUE).
- Jun 26 (W) **Lecture 3.** I. Cell Structure & Function: Organelles (continued). II. Anaerobic & Aerobic Metabolism. III. Cytoskeleton. IV. Introduction to Genetics. **Readings:** [ch 2, pp 27-41; *Appendix B*, pp A-16, A-17; *Appendix C*, pp A-18 to A-26 (LS)] (16 PAC).
- Jun 27 (R) **Lecture 4.** I. Nutrition in the News: The Eye-Mouth Gap. II. Nutrients Essential for Life: Water, Energy Nutrients (1<sup>o</sup> Carbohydrates, 2<sup>o</sup> Fats, 3<sup>o</sup> Proteins), Vitamins & Minerals. III. Standard Serving Sizes: Estimating for Dietary Analyses. IV. Exercise, Dieting or Both? **Readings:** *Module 2*, pp 9-16 (DC). [ch 16 pp 485-6 (LS). *Highlights of ch 1, 2, pp 1-67; ch 9, pp 339-62* (S&W)] (16 PAC).
- Jun 27 (R) **Lab 2:** Introduction to Anatomy & Physiology. **Readings:** pp 2-1 to 2-11 (LM) (130 HUE).
- Jul 1 (M) **Lecture 5.** I. Connections: Nutrition Quackery. II. Hydrolysis, the Central Theme of Digestion. IV. Gut Anatomy, Histology & General Secretions. **Readings:** *Module 3*, pp 17-23 (DC). [ch 15, pp 436-47; *focus on Table 15-1 pp 440-1* (LS)]
- Jul 2 (T) **Lecture 6.** I. Enzymatic Digestion, Absorption & Defecation. II. 2010 Dietary Guidelines for Americans. **Readings:** <http://www.cnpp.usda.gov/dietaryguidelines.htm> [ch 15, pp 447-59, 463-77 (LS)]

- Jul 2 (T) **Lab 3:** Diet Analyses w/SuperTracker. *NB:* Before the lab, please record your diet on p 3-7 (LM) & see <http://www.choosemyplate.gov> & <https://www.supertracker.usda.gov/default.aspx>. **Readings:** pp 3-1 to 3-16 (LM) (130 HUE).
- Jul 3 (W) **Lecture 7.** I. Open Discussion & Review for Midterm. II. **Midterm.**
- Jul 4 (R) No lecture or lab! Happy Independence Day!! Have fun, but be safe! ☺
- Jul 8 (M) **Lecture 8.** I. Circulatory: Cardiovascular & Lymphatic. II. Cardiac Physiology: Anatomy, Adult Heart & Fetal Blood Flow. **Readings:** *Module 4, pp 25-34 (DC). [ch 9, pp 228-34; ch 10, pp 281-7 (LS)]*
- Jul 9 (T) **Lecture 9.** I. What's a Heart Attack (AMI)? Stroke (CVA)? PVD? II. What Can I Do to Lower My Risk of Cardiovascular Diseases (CVDs)? III. Heart Rate & Blood Pressure? IV. Introduction to Blood Composition: Plasma vs. Serum, Red Blood Cells, White Blood Cells, Platelets; Hematocrit & Blood Typing. **Readings:** *Modules 5 & 6, pp 35-49 (DC); pp 5-1 thru 5-6 (LM). [ch 9, pp 252-9; ch 10, pp 260-70, 275, 287-95; ch 11, pp 296-312 (LS)]*
- Jul 9 (T) **Lab 4: Required Notebook Check.** Heart Rate, Blood Pressure & Cardiovascular Risk. *High Blood Pressure at the Time of Diagnosis*, Time-Life Medical Films. **Readings:** pp 4-1 to 4-13 (LM) (130 HUE).
- Jul 10 (W) **Lecture 10.** I. Blood Glucose & Diabetes Mellitus. II. Introduction to the Endocrine System: What's an Endocrine? Classifying Hormones. III. Hypothalamus, Pituitary & Target Organs. **Readings:** *Module 13, pp 103-13 (DC). [ch 4, pp 94-105; ch 17, pp 494-536 (LS)]*
- Jul 11 (R) **Lecture 11.** I. Blood Chemistry Review. II. Nervous System & Neurons (Nerve Cells); Central (Brain & Spinal Cord) vs. Peripheral Nervous System (Afferent & Efferent Divisions); The Autonomic Nervous System; Fight or Flight. III. Action Potentials, Synapses & the Neuromuscular Junction. **Readings:** *Module 9, pp 67-77 (DC). [ch 5, pp 106-11; ch 7, pp 178-93; ch 4, pp 70-88 (LS)]*
- Jul 11 (R) **Lab 5:** Blood Chemistry: Blood Glucose & Blood Typing. **Readings: Please reread pp 5-1 to 5-6 (LM) prior to the lab. Thanks sincerely!** (130 HUE).
- Jul 15 (M) **Lecture 12.** I. Muscle Physiology: Major Muscle Types; Structure of Skeletal Muscle. II. Molecular Basis of Skeletal Muscle Contraction. III. Metabolism & Fiber Types, Skeletal Muscle Adaptations. **Readings:** *Module 12, pp 97-102 (DC). [ch 8, pp 194-204; 210-4 (LS)]*
- Jul 16 (T) **Lecture 13 (Lucky!) :** I. Respiratory System: Structure & Histology. II. Gas Volumes & Capacities, III. Ventilation Mechanics & Control. IV. Gas Exchange & Transport. V. Physiology of Cigarette Smoking. **Readings:** *Module 7, pp 51-7 (DC). [ch 12, highlights of pp 344-79.]*
- Jul 16 (T) **Lab 6:** Pulmonary Function Tests. **Optional 2<sup>nd</sup> Notebook Check.** **Readings:** pp 6-1 to 6-8 (LM). (130 HUE).
- Jul 17 (W) **Lecture 14.** I. Open Discussion & Review for Final Exam. II. **Final Exam** (16 PAC).

Grading: Lecture Attendance & Participation\*(20%), Lab Attendance & Participation\*(20%), Midterm (30%), Final (30%).

\*Required attendance & participation are essential components of your grade! ☺ ...& of your life! We ♥ Human Physiology!!!