Course: BI 358 Investigations in Medical Physiology, CRN 21117, 04 cr, Lecture: 8:30-9:50 TR 110 Willamette (WIL) + Discussion: CRN 21118 10:00-11:50 T or CRN 21119 12:00-13:50 T 130 Huestis (HUE), Winter 2009.

Instructor: V. Pat Lombardi
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Office Hrs: M, 10:00-11:00 and by appointment.

Discussion Coordinator: Mark Compton
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*BI 358 Investigations in Medical Physiology Discussion/Lecture Notebook* (DLN), 2009. [Required]


See Course Reserve List [http://libweb.uoregon.edu/](http://libweb.uoregon.edu/) for additional excellent references. NB: Click on green tab *Course Reserves*, then type in Lombardi as *Instructor*.

Tentative Outline:


Jan 6 (T) **Discussions 1 & 2:** Introductions & Personal Information Cards; Guidelines for Research Paper & Presentation; Addiction Medicine Primer: Discussion + Mini-group Presentations on Common Drugs of Addiction: Alcohol, Cocaine, Heroin, Marijuana, Methamphetamine, Nicotine. **Readings:** DLN pp iv-x, 1-1 thru 1-2, 2-1 thru 2-60. **Additional Assignment:** Resources & Computer Search, Focus on Topics of Personal Interest to create paper outline (130 HUE, then BI Microcomputer Lab 33 KLA during open hours).

Jan 8 (R) **Lecture 2:** Autonomic Nervous System: Sympathetic vs Parasympathetic: Neurotransmitters, Receptors, Actions; Fight-or-Flight. Synapses & Introduction to Addiction Medicine. **Readings:** G&H ch 45 pp 558-64; ch 58 pp 728-38; ch 60 pp 748-60; DLN pp B-1 thru B-10.

Jan 13 (T) **Lecture 3:** Guest Lecture Series-Clinical: Douglas Bovee, MD, Addiction & Internal Medicine, Eugene, OR. *Pharmacology of Drugs of Addiction: Pathophysiology, Adverse Effects & Case Presentations.* DLN pp B-11 thru B-17.

Jan 13 (T) **Discussion 3:** Paper Topic & 4 Copies of Brief Outline Due + e-mail copy of outline to lombardi@uoregon.edu prior to Discussion. **Quiz 1**-covers Lectures 1, 2 & 3. Brief topic explanations within small groups. Peer review of outlines + feedback by e-mail. **Readings:** DLN pp 3-1 thru 3-2.

Jan 15 (R) **Lecture 4:** Spinal Anatomy & Physiology, Somatosensory Cortex, Dermatomes, Perception of Pain. LS1 ch 5 (Spinal Cord section); G&H ch 46 pp 572-8; ch 47 pp 585-97; ch 48 pp 598-607.

Jan 20 (T) **Lecture 5:** Guest Lecture Series-Clinical: Donna M. Morgan, MD, Pain Consultants of Oregon, Eugene, OR. *Pain Management.* **Readings:** DLN pp C-1 thru C-24.
Jan 20 (T)  **Discussion 4: Quiz 2**-covers Lectures 4 & 5. Nutrition Analyses & Disease Prevention. **NB: Please complete p 4-8 prior to this Discussion** by recording at least one full day of your diet so that you have personal data to conduct the computer nutritional analyses. **Readings:** DLN pp 4-1 thru 4-18.

Jan 22 (R)  **Lecture 6:** Gastrointestinal Anatomy, Physiology & Digestion. **Readings:** Highlights of G&H ch 62, 63, 64 & 65, pp 771-818.

Jan 27 (T)  **Lecture 7:** Nutrition & Disease Prevention. **Readings:** G&H ch 71 pp 865-80 +.


Jan 29 (R)  **Lecture 8:** Blood + Immunology I: Blood Cells & Immunity, Overview of Innate vs. Acquired/Adaptive (Nonspecific vs. Specific) Immunity. Immunology II: Immunity & Allergy + Evolution of the immune system. How breast milk protects newborns. **Readings:** G&H ch 32, 33 & 34, pp 419-50; DLN pp D-1 thru D-6 + e-mailed article link.

Feb 3 (T)  **Lecture 9:** Guest Lecture Series-Clinical: Kraig W. Jacobson, MD, Allergy & Asthma Associates, Eugene, OR. **Immunology, Asthma & Allergy.** DLN pp D-7 thru D-20.

Feb 3 (T)  **Discussion 6:** 4 Copies of Paper Draft Due to Section Members + **e-mail copy of Paper Draft to mcompton@uoregon.edu prior to Discussion.** **Quiz 4**-covers Lectures 8 & 9. Small Group Discussions + Feedback on papers by follow-up e-mails. See DLN p 6-1.

Feb 5 (R)  **Lecture 10:** Cardiovascular Physiology: Heart & Vessels Anatomy & Physiology, General Circulation, Coronary Circulation, Atherosclerosis, CABG & PTCA, Hypertension. **Readings:** G&H ch 9 pp 103-15; ch 14 pp 161-4; ch 15 pp 175-6; ch 19 pp 220-3; ch 21 pp 249-57; ch 68 pp 847-51; DLN pp E-1 thru E-17.

Feb 10 (T)  **Lecture 11:** Cardiovascular Physiology (continued).

Feb 10 (T)  **Discussion 7:** Class Presentations I.

Feb 12 (R)  **Lecture 12:** Guest Lecture Series-Clinical: Richard C. Padgett, MD, Cardiology, Oregon Cardiology Associates, Eugene, OR. **Clinical Cardiology, Case Studies & Recent Advances.** DLN pp E-18 thru E-34.

Feb 17 (T)  **Lecture 13:** Endocrinology I: Introduction to Endocrinology, Pituitary Hormones & Control by the Hypothalamus. Endocrinology II: Insulin, Glucagon & Diabetes Mellitus; Thyroid Metabolic Hormones. **Readings:** G&H ch 74 & 75 pp 905-30; G&H ch 78 pp 961-77; ch 76 pp 931-43; DLN pp F-1.

Feb 17 (T)  **Discussion 8:** **Quiz 5**-Covers Lectures 10, 11 & 12. Feedback on Papers (continued). **Additional Assignment:** Endocrine case histories to prepare for Dr. Cirullo. **Readings:** DLN pp 8-1 thru 8-8.

Feb 19 (R)  **Lecture 14:** Guest Lecture Series-Clinical: Ron Cirullo, MD, PhD, Internal Medicine, Endocrinology, Diabetes Mellitus & Thyroid Disorders, PeaceHealth Medical, Eugene, OR. **Endocrinology & Clinical Case Presentations.** **Readings:** DLN pp F-2 thru F-18.

Feb 24 (T)  **Lecture 15:** Guest Lecture Series-Research: Katrina N. Murray, DVM, PhD, University of Oregon, Zebrafish International Resource Center (ZIRC), Pathology & Health Services, Eugene, OR. **Zebrafish as a Model of Mitochondrial Disease.** **Readings:** DLN pp G-1 thru G-13.

Feb 24 (T)  **Discussion 9:** **Quiz 6**-covers Lectures 13, 14 & 15. **Break. Class Presentations II.**

Feb 26 (R)  **Lecture 16:** Fetal & Neonatal Physiology, Fetal Blood Flow, Pediatrics, Children & Development.


Mar  3 (T)  Discussion 10: Class Presentations III.


Mar 10 (T)  Discussion 11: Class Presentations IV.


Mar 17 (T)  Final Paper Due no later than 5:00 pm in Pat Lombardi’s box in Main Biology Office (77 KLA).

Grading:    Attendance & Participation, Feedback on Guest Lecturers (25%)
            Quizzes (25%)
            Class Presentation (25%)
            Research Paper (25%)