BI 121 Lecture 9

I. Announcements: No lab today! Break for exam week!
Next R Blood Chemistry. Thanks sincerely for helping us optimize safety by reading ≥ 2x Lab 5, LM pp 5-1 to 5-6.
II. Blood Form & Function LS ch 11, DC Module 5 pp 35-9
A. Formed vs Nonformed/cells vs plasma fig+tab 11-1
   Cell origin - bone marrow. What’s in plasma? p 316
B. Red blood cells/erythrocytes: O₂ carrying pp 317-8
   Normal flexible vs fragile sickle cell fig 11-5 p 320
C. White blood cells/leukocytes: defense/immunity differential + general functions pp 326-30 fig 11-1
D. Platelets/thrombocytes: clotting pp 321-2 fig 11-6
III. Blood Chemistry Lab: Basics LM + LS ch 11 & 17
A. What’s blood typing? ABO System ch 11 LS pp 341-4
B. Physiology in the News: Eat right for your type?
C. What’s blood glucose? Diabetes? LS ch 17 pp 560-73
D. Questions about blood chem lab?
IV. Exam Comments + Return

BI 121 Lecture 10

I. Announcements...This Thursday more fun & data about me! Heck yeah!!
II. Blood Chemistry Connections LS ch 11 p 303, ch 17 pp 525-36
   Erythroblastosis fetalis, diabetes, insulin, glucagon
III. Endocrinology Overview LS ch 17, DC Module 13, SI Fox+
   A. Vignette: Cushing's syndrome LS fig 17-20 p 521-2
   B. Endocrine system DC p 103 fig 13-1, LS fig 17-1, tab 17-1
   C. What’s an endocrine? + classes ~ LS pp 495-6
   D. Hypothalamus (Master) – Pituitary (subcontroller)
      DC pp 104-6 + LS pp 499-506
   E. Posterior pituitary + hormones DC p 108, LS fig 17-4 p 502
   F. Anterior pituitary + hormones DC pp 106-7, LS pp 502-6
   H. Peripheral endocrine organs DC pp 109-13, LS pp 513-36
      1. Pancreas (insulin – glucagon see-saw!) 2. Thyroid 3. Adrenals

BI 121 Lecture 11

I. Announcements Blood Chem Lab today! Fun day!!
   Personal data!! If you haven’t already done so, please review Lab 5 in LM or on our website. Thanks sincerely!
   Lab Manual & Exam I Remaining Returns. Q2 Exam 1?
II. Safety & Techniques Review for Blood Chem Lab Q?
III. Endocrine Connections LS ch 17, DC Module 13, SI Fox +...
   A. Posterior pituitary storage site DC p 108, LS fig 17-4 p 502
   B. Anterior pituitary hormones DC pp 105-7, LS pp 502-6
   C. Endocrine feedback + reflexes LS p 540 fig 17-7
   D. GH: Body builder’s dream? Fountain of youth?
      LS pp 506-10, fig 17-10, 17-11
   E. Peripheral endocrine organs DC pp 109-13, LS pp 513-36
      1. Pancreas (insulin – glucagon see-saw!)
      2. Thyroid
      3. Adrenals

BI 121 Lecture 12

I. Announcements Thanks for your help with blood lab!
   Great job! No lab this week. Study for Exam II, Dec 8, Mon!
II. Endocrine Connections Adrenals/Suprarenals
   LS pp 517-25 fig 17-18, 17-19; DC p 112 +...
III. Introduction to the Nervous System LS ch 5, DC Module 9
   A. How is the nervous system organized? LS fig 5-1 DC p 67
   C. What’s myelin? How does it help? DC fig 9-3, LS pp 83-5
   D. Brain structure & function DC fig 9-6 thru 9-10 pp 71-5 +...
   E. Protect your head with a helmet! Bicycle head injury statistics, NHTSA & BHSI from 2011, the most recent yr
IV. Autonomic Nervous System LS ch 7 pp 178-85+
   A. Sympathetic vs Parasympathetic branches fig 7-3
   B. Neurotransmitters & receptors fig 7-1 & 7-2, tab 7-2
   C. Actions tab 7-1
   D. Fight-or-flight stories!
BI 121 Lecture 13

I. Announcements No lab today – Study for Exam II!!
   Optional Lab notebook check after last Lab 6, Mac
   pulmonary function testing (PFT) next Thursday. Q?
II. CNS Connections Protect your head with a helmet!
    Bicycle head injury statistics, NHTSA & BHSI, 2011 data
III. Peripheral Nervous System LS sections of ch 3, 4, & 7
    A. Autonomic NS: Branches, neurotransmitters, 
       receptors, actions, fight-or-flight stories ch 7 pp179-85
    B. Why are nerve & muscle unique? ch 4 p 71
    C. How do excitable cells signal? ch 3 pp62-7; ch 4 pp74-83
    D. How does the signal cross the nerve-muscle gap?
       ch 7 p 185-92 fig 7-5 p 190
       1. Ca2+ bones!...but what else? p 190
       2. What do black widow spider venom, botulism, curare & nerve gas have in common? Botox pp 189-92

BI 121 Lecture 14

I. Announcements Last Lab 6, Pulmonary Function Testing +
   optional notebook ✓ this Thurs. Exam II Mon, Dec 8, 8 am Q?
II. Action Potential + Neuromuscular Junction Connections LS 7
    What’s an AP? What do black widow spider venom, botulism,curare & nerve gas have in common? LS fig 7-5 p190 Botox?
III. Muscle Structure-Function & Adaptation LS ch 8 + DC Mod 12
    A. Muscle types: cardiac, smooth, skeletal LS fig 8-1 pp194-6
    B. How is skeletal muscle organized? LS fig 8-2, DC fig 12-2
    C. What do thick filaments look like? LS fig 8-4, DC fig 12-4
    D. Thin filaments? LS fig 8-5
    E. Banding pattern? LS fig 8-3, fig 8-7
    F. How do muscles contract? LS fig 8-6, 8-10
    G. What’s a cross-bridge cycle? LS fig 8-11 +...
    H. Summary of skeletal muscle contraction
    I. Exercise adaptation variables: mode, intensity, duration, 
       frequency, distribution, individual & environmental?
    J. Endurance vs. strength training continuum? fiber types...

BI 121 Lecture 15

I. Announcements Lab 6, Pulmonary Function Testing (PFT) +
   optional notebook check today. Exam II Dec 8 Monday, 8 am!
II. Introduction to PFT Lab 6 Pulmonary Function Testing
III. Connections: Muscle Contraction+Adaptation DC Mod 12+
    A. Review of structure + banding pattern? LS fig 8-3, fig 8-7
    B. How do muscles contract? LS fig 8-6, 8-10, 8-11 +...
    C. Summary of skeletal muscle contraction with videos
       Courtesy David Bolinsky, XVIVO & Malcolm Campbell,
       Department of Biology, Davidson College, NC +...
    D. Exercise adaptation variables LS ch 8 pp 210-214
       mode, intensity, duration, frequency, distribution of
       training sessions, individual & environmental factors
    E. Endurance vs. Strength training continuum? fiber types...

BI 121 Lecture 16

I. Announcements Notebooks? Exam II, December 8th
   Monday 8 am. Review session in class next Thursday. Q?
II. Muscle Adaptation Connections LS ch 8, DC Module 12
III. Respiratory System LS ch 12, DC Module 7, Fox +...
    A. Steps of respiration? External vs. cellular/internal?
       LS fig 12-1 pp 345-347
    B. Respiratory anatomy LS fig 12-2 p 347, DC, Fox +...
    C. Histology LS fig 12-4 pp 347-349, DC
    D. How do we breathe? LS fig 12-12, fig 12-25 pp 349-356, 
       pp 373-378
    E. Gas exchange LS fig 12-19 pp 362-5
    F. Gas transport LS tab 12-3 pp 365-70
I. Announcements
Exam II Monday Dec 8th
@ 8:00 am! 12 n lab section report to 129 HUE,
1 pm lab section 130 HUE. All others here!
Discussion-Review, this Thursday, here in 100 WIL!

II. Respiratory Physiology Connections
LS ch 12, DC m7+
A. How do we breathe? LS fig 12-12, fig 12-25 pp 349-356,
   pp 373-378
B. Gas exchange LS fig 12-4, fig 12-19 pp 362-5
C. Gas transport LS fig 11-2 p 299, tab 12-3 pp 365-70
D. What happens in a gunshot wound or impalement
   injury? Pulmonay membranes? Pneumothorax?
   LS fig 12-5, 12-6, 12-8, 12-9, pp 349-52

III. Physiology of Cigarette Smoking
LS + DC + ACS +...
A. ANS, autonomic nerves & nicotine? Chemical route
B. Emphysema? 2nd-hand smoke?... LS p 356, 366
C. UO Smoke-Free since Fall 2012! Help is available!

Bl 121 Exam II is at 8 am on Monday, December 8th

12 n lab section report directly to 129 Huestis Hall

1 pm lab section report directly to 130 Huestis Hall

All others report to 100 Willamette (our lecture hall) for Exam II

Exam II start times for all locations is 8 am!

If you need special assistance for Exam II please contact Pat by
sending an e-mail to lombardi@uoregon.edu

Best of luck on all exams and papers!