BI 121 Lecture 10

I. Announcements To make Lab 5 educational, fun & safe for all, please read pp 5-1 thru 5-6 in LM twice before Thursday! Remaining exams & notebooks returned > lecture. Key posted in glass box in Huesis near 120 HUE. Estimate grade? Q?

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: Cushings 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 105-7, LS pp 502-6
   H. Peripheral endocrine organs DC pp 109-13, LS pp 513-36

   1. Pancreas (insulin – glucagon see-sawl) 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, in e-mail. Thanks sincerely! Lab Manual & Exam I Remaining Returns. Q from last t?

II. Physiology in Hollywood News? Type I vs Type II diabetes

III. Safety & Techniques Review for Blood Chem Lab Q?

IV. Endocrine Connections LS ch 17, DC Module 13, SI Fox +...
   A. What’s an endocrine? + classes ~ LS pp 495 - 6
   B. Hypothalamus (Master) – Pituitary (Slave!)
      DC pp 104-6 + LS pp 499-506
   C. Posterior pituitary storage site DC p 108, LS fig 17-4 p 502
   D. Anterior pituitary hormones DC pp 105-7, LS pp 502-6
   E. Endocrine feedback + reflexes LS p 540 fig 17-7
   F. GH: Body builder’s dream? Fountain of youth?
      LS pp 506-10, fig 17-10, 17-11
   G. Peripheral endocrine organs DC pp 109-13, LS pp 513-36
      1. Pancreas 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 Thyroid + Adrenals/Suparennals LS pp 513-25 fig 17-18, 17-19; DC p 109-113 +...

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, NHSTA & BHSI from 2011, the most recent yr

IV. Autonomic Nervous System LS ch 7 pp 178-85+
   A. Sympathetic vs Parasympathetic branches LS fig 7-3
   B. Neurotransmitters & receptors LS fig 7-1 & 7-2, tab 7-2
   C. Actions LS tab 7-1
   D. Fight-or-flight stories!
**BL 121 Lecture 13**

I. **Announcements**  No lab today – Study for Exam III!!

Optional Lab notebook check after last Lab 6, Mac pulmonary function testing (PFT) next Thursday. Q?

II. **CNS Connections**  Myelin, brain + spinal cord (CNS)

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 excitatory cells signal; ch 3 pp 62-7; ch 4 pp 74-83

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

**Fun lab with personal lifetime data!**

**Yes!!**

---

**BL 121 Lecture 14**

I. **Announcements**  Last Lab 6, Pulmonary Function Testing + optional notebook ✓ this Thurs. Exam II Tues, Dec 8, 8 am Q?

II. **Nervous System Connections**  LS 7

A. Autonomic NS: Branches, neurotransmitters, receptors, actions, fight-or-flight stories ch 7 pp 179-85

B. Why are nerve & muscle unique? ch 4 p 71

C. How do excitatory cells signal? ch 3 pp 62-7; ch 4 pp 74-83

D. How does the signal cross the nerve-muscle gap?

ch 7 p 185-92 fig 7-5 p 190

E. What do black widow spider venom, botulism/Botox?, curare & nerve gas have in common? LS fig 7-5 p 190

III. **Muscle Structure-Function & Adaptation**  LS ch 8 + DC Mod 12

A. Muscle types: cardiac, smooth, skeletal LS fig 8-1 pp 194-6

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? Banding pattern LS fig 8-5, 8-3, 8-7

E. How do muscles contract? LS fig 8-6, 8-10

F. What’s a cross-bridge cycle? LS fig 8-11 +...

---

**We're on a roll! Bring on Exam II!!**

---

**BL 121 Lecture 15**

I. **Announcements**  Lab 6, Pulmonary Function Testing (PFT) + optional notebook check today. Exam II Dec 8 Tuesday, 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 8-2 thru 8-5

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...

---

**BL 121 Lecture 16**

I. **Announcements**  Notebooks? Exam II, December 8th Tuesday 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 Tuesday Dec 8th @ 8:00 am! 12 n lab section report to 112 HUE, 1 pm lab section 130 HUE. All others here! Discussion-Review, this Thursday, here in 100 WIL! II. Respiratory System Connections  LS ch 12, DC Module 7+
   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? Pulmonary 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, 365
   C. UO Smoke-Free since Fall 2012! Help is available!

Bl 121 Lecture 17

We’re so close. Let’s shine on the exam!

But 1st focus on studying for Exam II!

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

12 n lab section report directly to 112 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!