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 thru 5-6.

II. **Blood Form & Function**

LS ch 11, DC Module 5 pp 35-9
A. Formed vs Nonformed/cells vs plasma LS fig + tab 11-1
   Cell origin - bone marrow. What’s in plasma? LS p 297
B. Red blood cells/erythrocytes: O₂ carrying LS p 299
   Normal flexible vs fragile sickle cell LS p 301
C. White blood cells/leukocytes: defense/immunity differential + general functions LS pp 298, 309-12
D. Platelets/thrombocytes: clotting LS pp 304-6 fig 11-6+7

III. **Blood Chemistry Lab: Basics**

LM + LS ch 11 & 17
A. What’s blood typing? ABO System LS pp 302-4
   Rhesus factor? Erythroblastos fetalis LS p 303-4
B. What’s blood glucose? Clinically healthy range?
C. Diabetes + Treatment LS ch 17 pp 532-5

IV. **Exam Comments & Return**

Ghost, marshmallow or white blood cell?

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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 Huestis near 120 HUE? Estimate grade? Q?

II. **Blood Chemistry Review**

LS ch 11 + 17, DC Module 5, Q?

III. **Blood Glucose, Insulin Diabetes Connections**

DC Module 13+

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 105-7, 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

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I. **Announcements**

Thanks to you, Courtney, Eli, Nelson & Katie!

Thanks for your effort & your 🍼!!

II. **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. 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 2013 & 2014

III. **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 14

I. **Announcements** Last Lab 6, Pulmonary Function Testing + Optional notebook this Thurs. Exam II Fri Dec 7, 8am Q?

II. **Nervous System Connections** LS ch 3, 4 & 7; DC Module 9
A. Why nerve & muscle unique? How do they signal?
   - LS pp 62-67, 74-83
B. How does the signal cross the nerve-muscle gap?
   - LS p 185-92 fig 7-5 p 190; DC pp 69-71 fig 9-4
   1. Ca2+ bones!...but what else? LS p 190
   2. What do black widow spider venom, botulism, curare & nerve gas have in common? Botox pp 189-92

III. **Muscle Structure & Function** LS ch 8 + DC Mod 12
A. Muscle types: cardiac, smooth, skeletal
   - LS fig 8-1
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. How thick filaments look like?
   - LS fig 8-5
E. How do muscles contract?
   - LS fig 8-3, 8-7
F. Banding pattern?
   - 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 char...
J. Endurance vs. strength training continuum? fiber types...

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Pulmonary Function Testing today! Hooray!...

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BL 121 Lecture 16

I. **Announcements** Notebooks? Exam II, Dec 7th
   - Friday 8 am. Review session in class next Thurs. Q?

II. **Muscle Contraction & Adaptation** LS ch 8, DC Mod 12
A. Banding pattern?
   - LS fig 8-3, fig 8-7
B. How do muscles contract?
   - LS fig 8-6, 8-10
C. What's a cross-bridge cycle?
   - LS fig 8-11 +...
D. Summary of skeletal muscle contraction
E. Exercise adaptation variables: mode, intensity, duration, frequency, distribution, individual & environmental char...
F. Endurance vs. strength training continuum? fiber types...

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
BI 121 Exam II is at 8 am on Friday, December 7th

12 n lab section report directly to 5 Klamath Hall
1 pm lab section report directly to 13 Klamath Hall
2 pm lab section report directly to 21 Klamath Hall

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

Exam II start time 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!

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**Announcements** Exam II next Friday, Dec 7th @ 8:00 am!
12 n lab section go to 5 KLA; 1 pm lab section go to 13 KLA;
2 pm lab section go to 21 KLA. Discussion-Review Thurs. Q?

**Respiratory System** LS ch 12, DC Module 7, SI Fox +...
A. Respiratory system anatomy LS fig 12-2 p 347, DC, SI Fox+...
B. Histology LS fig 12-4 pp 347-9, DC fig 7-4 p 54
C. How do we breathe? LS fig12-12, fig12-25 pp 349-56, 373-8
D. Gas exchange LS fig 12-19 pp 362-5
E. Gas transport LS tab 12-3 pp 365-70

**Physiology of Cigarette Smoking**
A. ANS, autonomic nerves & nicotine? Route of chemicals,...
B. Emphysema? 2nd-hand smoke?... LS pp 356, 365
C. UO Smoke-Free since Fall 2012! Help is available!