Bl 121 Lecture 1

...Welcome to Human Physiology - what makes us tick!

I. Announcements: Please check & sign attendance roster.
Not on list? See Pat during a break or after class. Lab 1
Histology tomorrow in 130 HUE: 12 n & 1 pm sections.

II. Introduction: Staff, office hr, required sources, course
overview, grading, expectations & success. Q?

III. Human Physiology LS ch 1, DC Module 1
A. What? cf: Anatomy LS p 1
B. Where? Body Levels of Organization LS pp1-6, DC pp1-5
C. How? Different Study Approaches LS p 1

IV. Homeostasis LS ch 1, DC Module 1
A. What? Maintenance of ECF LS p 8
B. Where? ECF = Plasma + Interstitium LS fig 1-4 p 8
C. How? Simplified Homeostatic Model cf: LS fig 1-7 p 14
   Balances LS p 9, DC pp 5-6
D. Why? Cell survival! LS fig 1-5 p 9, DC p 5

Bl 121 Lecture 2

...Histology exploratory fun!!
Thanks for signing in!

I. Announcements Lab today 12 n & 1 pm. Q last time?

II. Connections Extracellular fluid (ECF) & Homeostasis
   A. ECF: Plasma vs. Interstitium?
   B. Dr Evonuk Balances LS pp 5-15
   C. Physiology in the News Are we like watermelons?
   D. Simplified Model DO Norris cf: fig 1-8 LS
   E. Negative feedback? Positive feedback? LS pp 14-15
   F. Balances & e.g. H2O, T°C, BP Dr Evonuk + LS pp 8-10

III. Cell Anatomy, Physiology & Compartmentalization ch 2 (LS)
   B. Basic survival skills ch 1 p 3
   C. Organelles ≡ Membranous, cytoplasmic specialty shops!
      1. Endoplasmic Reticulum (ER) 2. Golgi 3. Lysosomes
      fig 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8 pp 20-7 tab 2-1 p 36
   D. Physiol News Moms eggs execute Dad’s mitochondria?
   E. What about vaults? LS 2006, p 32 + Science News

Bl 121 Lecture 3

Anatomy & Physiology Lab tomorrow!

I. Announcements Q from lecture or lab?

II. Cell Physiology Connections LS ch 2
   A. Exocytosis vs. Endocytosis fig 2-5 a & b, p 25
   B. Organelles ≡ ICF specialty shops (continued) ...
      3. Lysosomes 4. Peroxisomes 5. Mitochondria pp 20-34,
      fig 2-5 thru 2-8, pp 20-7, tab 2-1 p 36
   C. Physiol News Moms eggs execute Dad’s mitochondria?

III. Anaerobic vs Aerobic Metabolism Summary LS ch 2 pp 26-33
   A. Key differences fig 2-15 + vpl
   B. Selected details: Glycolysis, CAC, ETC, fig 2-9 thru 2-12

IV. Introduction to Genetics LS 2012 ch 2 p 20-1 + Appendix C
   A. What’s a gene? Where? p A-18, fig C-2, C-3
   B. Why are genes important? p A-18
   C. What’s DNA & what does it look like? pp A-18 thru A-20
   D. How does information flow in the cell? fig C-6
   E. How does DNA differ from RNA? pp A-20 thru A-22

Bl 121 Lecture 4

I. Announcements Nutrition Analysis Lab next Tuesday!
Please record your diet on p 3-7 LM & begin analysis using

II. Introduction to Genetics LS 2012 ch 2 p 20-1 + Appendix C
   A. How does information flow in the cell? fig C-6
   B. How does DNA differ from RNA? pp A-20 thru A-22
   C. Genetic code? pp A-22, A-23
   D. How & where are proteins made? fig C-7, C-9
   E. Class skit: Making proteins @ ribosomes!

III. Nutrition Primer DC Module 2, Sizer & Whitney (S&W) Sci Lib
   A. Essential Nutrients: H2O, 1° Carbohydrates,
      2° Fats, 3° Proteins, Vitamins, Minerals; Macro- vs Micro-?
   B. Dietary Guidelines: USDA, AICR, Eat Like the Rainbow!
   C. Diet or exercise? Diet composition & endurance? Fasting?
      Zuti & Golding 1976; Sacks AHA NPM Council 2009;
      AMDR? Adjusted Macronutrient Distribution Range!
   D. Nutrition Quackery, Balanced Approach Kleiner, Monaco+
BI 121 Lecture 5


II. Nutritional Physiology in the News
   UCB Wellness Letter, June 2011, Salt–beyond hypertension Gain weight by drinking your calories? 
   UCB Wellness Letter, November 2014, Coconuts are on a roll?

III. Nutrition Primer (continued) DC Module 2, Sizer & Whitney (S&W) Science Library
   A. What’s the best path to losing weight? What about fasting? Zuti & Golding 1976; Sacks AHA NPAM Council 2009; AMDR. Adjusted Macronutrient Distribution Range!
   B. Nutrition Quackery, Balanced Approach Kleiner, Monaco+

IV. Digestion LS ch 15, DC Module pp 17-23
   A. Steps of digestion Dr. Evonuk + LS pp 437-9; DC p 23
   B. Hydrolysis: the central linking theme! LS p 438, Fox 2009
   C. What’s missing? LS fig 15-1 p 438
   D. Gi-Donut analogy? Dr. Lorraine Brilla WWU
   F. Organ-by-organ review LS tab 15-1 pp 440-1 + DC fig 3-1

Midterm Review Slides

BI 121 Lecture 6 + Q + ½ Midterm Review

I. Announcements Next session Q? ~½ review, then Midterm. Fun Lab 3 Nutrition today! Sample Suisse Calculation? Q?

II. Nutrition in the News Be a whiz at healthy grilling!
   American Institute for Cancer Research, Grilling Quiz!

III. Digestion Connections LS ch 15, DC Module pp 17-23
   A. Histology of the gut LS fig 15-2, 15-3 p 442-3
   B. Stomach protein digestion + zymogens? LS fig 15-7, 15-9
   C. Accessory organs: Pancreas & Liver + Recycling!
      LS pp 457-63
      http://www.cdc.gov/ulcer Beyond the Basics LS p 456
   E. Summary of chemical digestion LS tab 15-5 p 466
   F. Large Intestine? LS fig 15-24 pp 472-4

IV. Midterm Review Discussion + Q?