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’s 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’s Maintenance of ECF LS p 8
B. Where? ECF = Plasma + Intersitial 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. Intersitial?
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

LS 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 pp 20-34, fig 2-1...2-8

A. Organelles = ICF specialty shops: 1. Endoplasmic
   Reticulum 2. Golgi Apparatus 3. Lysosomes
   4. Peroxisomes 5. Mitochondria tab 2-1 p 36
B. Exocytosis vs. Endocytosis fig 2-5 a & b, p 25
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

B. How does information flow in the cell? fig C-6
C. How does DNA differ from RNA? pp A-20 thru A-22
E. How & where are proteins made? fig C-7, C-9
F. Class skit: Making proteins @ ribosomes!

IV. Nutrition Primer
DC Module 2, Sizer & Whitney(S&W) Sci Lib

A. Essential Nutrients: H2O, 10 Carbohydrates,
   20 Fats, 30 Proteins, Vitamins, Minerals; Macro- vs Micro-?
B. Dietary Guidelines: USDA, AICR, Eat Like the Rainbow!
C. Diet or Exercise? Diet composition & endurance? Fasting?
   Zutti & Golding 1976; Sacks AHA NPAM Council 2009;
   AMDR? Adjusted Macronutrient Distribution Range!
D. Nutrition Quackery, Balanced Approach Kleiner, Monaco+
BI 121 Lecture 5


II. **Nutritional Physiology in the News**
Gain weight by drinking your calories? PEBB Newsletter Salt—beyond hypertension UCB Wellness Letter, June 2011

III. **Nutrition Primer** DC Module 2, Sizer & Whitney (S&W) Sci Lib
A. Dietary Guidelines: USDA, AICR, Eat Like the *Rainbow!*

C. Nutrition Quackery, Balanced Approach Kleiner, Monaco+

IV. **Digestion** LS 2012 ch 15, pp 437-9, DC Module 3 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. Gl-Donut analogy? Dr. Lorraine Brilla WWU
F. Organ-by-organ review LS tab 15-1 pp 440-1 + DC fig 3-1

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**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
   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?