BI 121 Lecture 1

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 + Intercellular space 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

BI 121 Lecture 2

I. Announcements: Lab today 12 n & 1 pm. Q last time?
II. Connections Extracellular fluid (ECF) & Homeostasis
   A. ECF: Plasma vs. Intercellular space?
   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 & Compartimentalization ch 2 (LS)
   B. Basic survival skills ch 1 p 3
   C. Organelles & Membranes, 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

BI 121 Lecture 3

I. Announcements Q from lecture or lab?
II. Cell Physiology Connections LS ch 2
   A. Compartment advantage + Cell survival skills!
   B. Organelles = ICF specialty shops: 1. ER – rough & smooth
      pp 20-34, fig 2-1 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 pp 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

BI 121 Lecture 4

I. Announcements Nutrition Analysis Lab next Tuesday!
   Please record your diet on p 3-7 LM & begin analysis using
II. Anaerobic & Aerobic Metabolism Connections LS ch 2 +
III. Introduction to Genetics LS 2012 ch 2 pp 20-1 + Appendix C
   A. What’s a gene? Where located? Why important?
      p A-18, fig C-2, C-3
   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, 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 AHNAPAM 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

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!
   - D. 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. 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**

**STUDY SMART**

BI 121 Lecture 6 + Q + ½ Midterm Review

I. **Announcements** Next session Q? ~¼ 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?