


BI 121 Lecture 1  ...Welcome to Human Physiology – what makes us tick!  
*✓ E. Mathews*

- I. **Announcements:** Please check & sign attendance roster. Not on list? See Pat during break/>class. *Lab 1 Histology* Thursday, 10 am – 5 pm sections in 130 HUE. Much fun!!
- 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
  - D. Why? Security+Decision-Making Power LS p xxi, DC p v
- 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


BI 121 Lecture 3 **Anatomy & Physiology Lab Thurs! Fun again...** 

- I. **Announcements** Sign roster? OSA Voting. Q? **Office hr?**
- II. **Cell Anatomy, Physiology & Compartmentalization** LS ch 2
  - A. How big? What boundaries? Why compartments? pp19-21
  - B. Basic survival skills ch 1 p 3
  - C. Organelles ≡ Membranous, cytoplasmic specialty shops!
    1. Endoplasmic Reticulum (ER) 2. Golgi 3. Lysosomes 4. Peroxisomes & 5. Mitochondria. LS 2012 pp 20-34 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. What about vaults? LS 2006, p 32
  - E. **Physiol News** Mom's eggs execute Dad's mitochondria?
- III. **Anaerobic vs Aerobic Metabolism Overview** Many sources! Mathews & Fox 1976...LS 2012 pp 26-33, fig 2-15 p 33
- 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
  - F. Genetic code? pp A-22, A-23
  - G. How are proteins made? fig C-7, C-9

BI 121 Lecture 2  ... Thanks for signing attendance roster & noting late arrival or early departure time!

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- I. **Announcements** Lab 1 Histology today! 130 HUE. Fun! Readings: DC, LS, LM? **NB:** Course website UO Biology vs. Blackboard <http://blogs.uoregon.edu/bi121/fall-2014/>
  - II. **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. **Homeostatic Balances?** LS p 9, DC pp 5-6
    - D. **Why?** Cell survival! LS fig 1-5 p 9, DC p 5
    - E. **Physiology in the News** H<sub>2</sub>O? Are we like watermelons?
    - F. **How** are balances maintained? Simplified Homeostatic Model cf: LS fig 1-7 p 14; T°C + BP balance e.g. + vs. - FB
  - III. **Cell Anatomy, Physiology & Compartmentalization** LS ch 2
    - A. How big? What boundaries? Why compartments? pp 19-21
    - B. Basic survival skills LS ch 1 p 3
    - C. Organelles ≡ Intracellular specialty shops Endoplasmic Reticulum (ER), Golgi, Lysosomes, Peroxisomes & Mitochondria, LS fig 2-1, 2-2, 2-3 pp 20-3

BI 121 Lecture 4  **Structure-function = fun!**

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- I. **Announcements** Anatomy & Physiology Lab today! Be sure to complete p 3-7 dietary record in LM < lab next wk! Help with estimating serving sizes for Nutrition Lab 3. Q?
  - II. **Physiology in the News + Connections** Mom's eggs execute dad's mitochondria? What's a vault? *Science News*
  - III. **Anaerobic vs Aerobic Metabolism Summary** LS ch 2 pp 26-33
    - A. Take-home points + key differences fig 2-15 + vpl
    - B. Few details: Glycolysis, CAC, ETC fig 2-9, 2-10, 2-11, 2-12
  - IV. **Cytoskeleton** LS 2012 fig 2-17, 2-18 + LS 2006 fig 2-20
  - V. **Introduction to Genetics** LS 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
    - F. Genetic code? pp A-22, A-23
    - G. How are proteins made? Class skit! fig C-7, C-9

BI 121 Lecture 5

Nutrition Lab Thursday! More fun...



I. **Announcements** Nutrition Analysis Lab this Thursday!  
Please record diet on p 3-7 LM & begin analysis using  
<https://www.supertracker.usda.gov/> Q?

II. **Introduction to Genetics** LS 2012 ch 2 p 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
- D. Genetic code? pp A-22, A-23
- E. How & where are proteins made? fig C-7, C-9
- F. Class skit: Making proteins @ ribosomes!

III. **Nutrition Primer**Sizer & Whitney (S&W) Sci Lib

- A. Essential Nutrients: H<sub>2</sub>O, 1<sup>o</sup> Carbohydrates,  
2<sup>o</sup> Fats, 3<sup>o</sup> 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 NPAM Council** 2009;  
AMDR? Adjusted Macronutrient Distribution Range!
- D. **Beware of Nutrition Quackery** S. Kleiner & Monaco 1990!



BI 121 Lecture 7 Exam I one week from today! I'll be ready!...



I. **Announcements** Lab Notebooks? Q? from last time?

II. **GI Physiology Connections** DC Module 3 pp 17-23, LS ch 15+

- A. How is the gut controlled? Common control mechanisms
- B. Gut layers LS fig 15-2 pp 439-43 → DC p 23 →
- C. GI secretions: What? Where? Why? LS p 438
- D. Organ-by-organ review A&P LS tab 15-1 pp 440-1 +...
- E. Zymogen? = Inactive precursor LS fig 15-9 p 452...
- F. Accessory organs? Pancreas, Liver, Recycling! pp 457-63
- G. Small intestine? Ulcers? LS fig 15-20, 15-22 pp 467-8  
<http://www.cdc.gov/ulcer> Beyond the Basics LS p 456
- H. Large intestine? LS fig 15-24 pp 472-4

III. **Cardiovascular System** DC Mod 4, LS ch 9, Torstar, G&H+...

- A. Circulatory vs. Cardiovascular (CV)? CV vs. Lymphatic  
CV Pulmonary & Systemic circuits DC pp 23-31+LS p 229+  
DC fig 4-1 p 24, LS fig 9-2b p 231
- B. Arteries, capillaries, veins, varicosities? G&H, Torstar, DC
- C. ♥ layers, box, chambers, valves, inlets, outlets  
LS fig 9-4 p 233, fig 9-2a p 231; DC pp 23-6
- D. Normal vs. abnormal blood flow thru ♥ & CVS LS, Fox+...

BI 121 Lecture 6 Nutrition Lab 3 today! More fun about me...



I. **Announcements** Nutrition Lab Today! Got Data? Q?

If you want notebook to study for Exam I on Oct 28th,  
turn in prior lecture next Tuesday, Oct 21<sup>st</sup>. Sample Exam Q.

II. **Nutrition Connections** Sizer & Whitney (S&W) Sci Lib + DC

- A. Diet or exercise? Diet composition & endurance? Fasting?  
Zuti & Golding 1976; Sacks **AHA NPAM Council** 2009;  
AMDR? Adjusted Macronutrient Distribution Range!
- B. **Beware of Nutrition Quackery** S. Kleiner & Monaco 1990!

III. **Gastrointestinal Physiology** DC Module 3 pp 17-23, LS ch 15+

- A. Steps of digestion, hydrolysis central theme LS pp 437-9
- B. What's missing? LS fig 15-1 p 438
- C. GI = Donut? GI secretions: What? Where? Why? LS p 438
- D. How is the gut controlled?
- E. Organ-by-organ review A&P LS tab 15-1 pp 440-1 +...
- F. Zymogen? = Inactive precursor LS fig 15-9 p 452...
- G. Accessory organs? Pancreas, Liver, Recycling! pp 457-63
- H. Small intestine? Ulcers? LS fig 15-20, 15-22 pp 467-8  
<http://www.cdc.gov/ulcer> Beyond the Basics LS p 456
- I. Large intestine? LS fig 15-24 pp 472-4

BI 121 Lecture 8

Fun heart rate & BP lab today! Hooray!!..



I. **Announcements** Exam I next session; 12 n lab section  
**go directly to 129 Huestis (HUE). All others here (100 WIL)!**

Review: Sunday, 6 pm here (100 WIL)! Lab notebooks. Q?

II. **Cardiovascular Connections** LS 2012 ch 9, Torstar Books+...

III. **CV Physiology in News** AHA + NHLBI websites. Nic? ACSM,

AHA, DHHS Healthy people exercise guidelines!

IV. **CV Pathophysiology & Risk Reduction** LS ch 9, 10 +...

- A. AMI, CVA, CVD, PVD, TIA, HTN? + surgical treatments
- B. Atherosclerosis? LS fig 9-27, 9-25, 9-26 pp 266-8
- C. How to minimize risk of CVDs? Treatment triad:  
Exercise, Diet, Drugs+Surgery
- D. Food choices make  
a difference?  
What's HAPOC?

