

CSED 7412 Cellular Nutrition
Tuesday 4:00-7:00, Room: 170 Fieldhouse

INSTRUCTOR: Dr. Randy Buddington
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OFFICE HOURS: Mon & Tues 1-4
or drop in or make an appointment

COURSE OBJECTIVES

- A. Provide a detailed understanding of the cellular and sub-cellular metabolism of macronutrients.
- B. Examine the interrelationships of macronutrients and regulatory factors influencing cellular nutrition.
- C. Explore dietary interventions for treatment of metabolic dysfunctions.
- D. Consider and critique recent trends and developments in nutrition research.

TEXT: Gropper, Sareens S., Smith, Jack L., and Groff, James L. 4rd. Ed. Advanced Nutrition and Human Metabolism, West Publishing Co., 2005

The text for Fall, '08 will be Biochemical, Physiological, Molecular Aspects of Human Nutrition by Martha H. Stipanuk, 2nd Edition, Saunders Elsevier

The text provides a foundation of knowledge about physiology based on mechanisms and principles that apply to vertebrates and invertebrates. Information presented in the text will be supplemented by additional material obtained from other sources, with an emphasis on recent publications/findings. Comparative perspectives will be included to provide information of interest to students who are interested in animals other than humans.

LECTURE SCHEDULE (Tentative schedule, adjustments may be made)

<u>Schedule (date)</u>	<u>Topic</u>	<u>Required Reading</u>
Aug 28	Introduction / Components of the Cell	Ch.1
Sep 4	Digestion and nutrient availability	Ch. 2
11	Energy transformations; intro to Carbohydrates	Chs. 3&4
18	Exam 1 ; Carbohydrates	Ch.4
25	Carbohydrates; presentations	Ch.4
Oct 2	Carbohydrates; presentations	Chs. 4&5
9	Exam 2 ; Lipids	Ch. 6
16	Fall Break	

	23	Lipids; presentations	Ch. 6
	30	Lipids; presentations	Ch. 6
Nov	6	Exam 3 / Protein	Ch.7
	13	Protein; presentations	Ch.7
	20	Protein; presentations	Ch. 7
	27	Integration/ Regulation of Metabolism	Ch. 8
Dec	4	Major Presentations	
	11	Final Exam (not comprehensive)	

Special Needs:

Any student who has special needs for assistance and/or accommodation, and who is registered with the Office of Student disability Services (678-2880), should meet with Dr. Buddington during the first week of classes.

Plagiarism:

Plagiarism includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full or clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Please refer to the University's "Code of Student Conduct" for actions that may result from student academic misconduct.

Learning Environment

The Department of HMSE recognizes its responsibility to promote a safe and diversity-sensitive learning environment that respects the rights, dignity, and well-being of students, faculty, and staff. Diversity means the fair representation of all groups of individuals, the inclusion of contrasting perspectives and voices, together with the appreciation and valuing of different cultural and socioeconomic group practices. Moreover, HSS aspires to foster a climate of mutual respect and empathy, among and between students, faculty, and staff, by nurturing an atmosphere that is free from discrimination, harassment, exploitation, or intimidation. Departmental courses will strive to provide an opportunity for all students to openly discuss issues of diversity including, but not limited to, age, disability, ethnicity, gender, race, religious beliefs, and sexual orientation.

Harassment:

The Department of HSS believes it is important to respond to insensitive and inappropriate behavior in a spirit of collegiality, mutual respect, and professionalism. If you believe that you have been the target of discrimination by another student, a faculty member, or staff member, due

to age, disability, ethnicity, gender, race, religious beliefs, sexual orientation, or cultural group membership, you can choose to pursue one or more of the following avenues:

The most direct approach, if you feel comfortable doing so, is to speak directly to the person whose behavior you consider to be inappropriate.

1. You may speak to the instructor, an HSS faculty member, the Department Chair (678-4165), or the University's Affirmative Action Officer (678-2713)
2. You may contact the Assistant Dean of Students (678-2298) in the Office of Student Judicial Affairs.

Grading:	4 Exams worth 100 pts. = 400				
	Major project = 100 pts				
	4 Articles 25 pts each = 100				
	Class participation = 10				
		98-100=A+	88-89=B-	78-79=C+	pts.
		94-97=A	84-87=B	74-77=C	pts
		90-93=A-	80-83=B-	70-73=C-	pts

Assignments will not be accepted late. No make up exams given except under extreme circumstances, and must be approved prior to exam day.

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Assignments:

Presentation of Research Article:

Find a research article related to the metabolism of each of the following. (Carbohydrate, alcohol, lipid, protein) Write a brief summary (abstract) of the paper, which will be turned in. Be prepared to present the paper to the class. Students to present their article will be randomly selected at the beginning of each class period. Articles must come from a professional journal published since 2002. (The more recent the better) The article should be of a human study.

The written summary should include the following.

1. Title, authors, journal, year, volume, inclusive pages.
2. Purpose of the study.

Methodology:

1. subjects
2. design of study
3. procedures of analysis

Results

Critique (Your evaluation of the study)

Abstracts will be graded as follows: Possible 25 points.

1. Selection of articles - meets the above requirements. Turned in on time. Abstracts must be typed. (15 pts)

2. Presentation. (10 pts)

Presentation of Selected Topics

Each student will select one of the Inborn errors of Metabolism from the list below. Topics selected:

Select a topic that has some clinical significance relating to the topic. If possible, select a topic that relates to one of the energy yielding nutrients. I suggest that you look through the subject index of some of the nutrition related journals or other health related journals to see what topics are being published on related to your disease. Then run a literature search to see if you can find other articles on the same topic. Remember, it is better that your topic not be too broad. Try to find at least 4-6 original research articles. You may include one secondary source, such as a book or a review article. You may also include web sources, but make sure you reference them properly and that they are reputable sites.

Each presentation should be approximately 20 minutes. Leave about 3 minutes for questions.

Research the topic and present the most recent information available.

Topic must be approved by Sept 18. Have your title written down to be turned in. Make sure topics are not duplicated within groups.

The following will be turned in by November 21. Must be typed.

1. Title page
2. Written summary of your topic. Not to exceed 6 typed written pages. Reference text as you would a research paper.
3. Outline of presentation including major topics to be covered.
4. List of references. The research articles should be current. (2000 to present). Reference format must follow that used in the Journal of the American Dietetic Association. (See the ADA website for instructions and guidelines.)

Assignment will be worth 100 points.

Written portion: done accurately and turned in on time.	40 pts.
Presentation	60 pts

Power Point Presentation will be graded as follows:

1. Organization: Material organized and presented in a logical sequence. (20 pts)
 - Introduction to the topic (Why you think this topic is relevant)
 - Body - Research that supports or relates to the topic
 - Conclusion and summary

3. Delivery: Present material in an interesting, easy to understand manner.
Voice should be loud and clear. Do not read your talk. Stayed within time allotment.
(15 pts)

5. Knowledge / Accuracy:
It should be evident that you have a clear understanding of the subject.
If you are not sure of the meaning or pronunciation of something look it up.
You should be able to answer questions. (15 pts)

6. Quality and effectiveness of visual aids. (10 pts)