709:552 Nutrition: A Biochemical and Physiological Basis: Spring 2014
MW 5:35-6:55 pm Food Science Auditorium, and Friday 2:15-3:35 pm 114 Thompson
Mid-term Exams will be held in 114 Thompson Hall on the dates indicated

Date/Day	Topic	Professor
1/24 Fri	Intro/organization, Body Composition	Watford
1/31 Fri	BAT (Brown or Beige?)	Watford
2/7 Fri	Doubly Labeled Water	Watford
2/14 Fri	Epigenetics and Food intake	Watford
2/17 Mon	**EXAM I**	
2/21 Fri	Dietary Reference Intakes	Brasaemle
2/28 Fri	Gene Expression and Vitamin A	Brasaemle
3/7 Fri	Vitamin D and K	Brasaemle
3/10 Mon	**EXAM II**	
3/14 Fri	Folate, Vitamins B6 and B12	Brasaemle
3/28 Fri	Niacin, Riboflavin, Thiamin	Brasaemle
4/4 Fri	Antioxidants, Vitamins E and C	Brasaemle
4/7 Mon	**EXAM III**	
4/11 Fri	Water and Electrolytes	Anthony
4/18 Fri	Calcium, Phosphorous, Magnesium	Anthony
4/25 Fri	Iron, Zinc, Copper	Anthony
5/2 Fri	Iodine, Selenium	Anthony
5/9 Fri	**Exam IV**	

Required Textbook:
Biochemical and Physiological Aspects of Human Nutrition, By Martha H. Stipanuk, W. B. Saunders Publishers, 3rd Edition.
Additional Readings will be handed out during class for the following week, sent via e-mail to your campus e-mail address, or posted on sakai

Assignments:
Weekly written assignments based on readings will be assigned during class to be handed in the following week. Verbal participation is expected and will be evaluated as a part of the final grade.

Exams will be essay exams involving the interpretation of data and the constructive use of assimilated knowledge to design experiments and solve problems.

Exam 4 will be Friday, May 9, 3-6 pm, 114 Thompson

Grading:
Exam 1 – 140 points
Exam 2 – 100 points
Exam 3 – 100 points
Exam 4 – 160 points
Weekly assignments and verbal participation – 170 points
Total—670 points

Course Objectives:
Learning goals:
Through lectures, readings, homework assignments and class discussions, students will gain

1. an understanding of the dietary requirements, uptake, transport, metabolism and functions of vitamins and minerals
2. knowledge of the consequences of vitamin and mineral deficiency and excessive uptake
3. an understanding of the physiological regulation of food intake and energy metabolism and how various nutritional states (starvation, obesity) affect body composition and energy metabolism
4. Experience in comprehension and critical evaluation of published manuscripts about nutrition from peer-reviewed journals

University policy on academic conduct
It is each student's responsibility to know and understand the University's policy on academic integrity. The policy and links to details of the policy are available at http://academicintegrity.rutgers.edu/policy-on-academic-integrity

Plagiarism is a violation of the policy and is not permitted; use of unattributed or copied content in class assignments will result in failure of the assignment and may lead to failure of the course and separation from the Graduate Program and University.

Turnitin plagiarism detection software will be used to scan assignments for copied and improperly attributed material.

709:401 Advanced Nutrition II: Energy and Micronutrients
MW 5:35-6:55 pm, Food Science Auditorium
Spring 2014 Syllabus

Day/Date	Topic	Professor	Reading
1/22 Wed	Energy/Bioenergetics	Watford	Chapter 21
1/27 Mon	Body Composition	Watford	Chapter 22, 23
1/29 Wed	Energy Expenditure I - Measurement	Watford	Chapter 21, 22
2/3 Mon	Energy Expenditure II - Regulation	Watford	Chapter 21, 22
2/5 Wed	Growth: Under- and Over-Nutrition	Watford	Chapter 22, 23
2/10 Mon	Obesity I	Watford	Chapter 22, 23
2/12 Wed	Obesity II-Food Intake	Watford	Chapter 22
2/17 Mon	**EXAM I**		
2/19 Wed	Dietary Reference Intake	Brasaemle	Chapter 3
2/24 Mon	Nutrient Regulation of Gene Expression	Brasaemle	Biochem text + Pgs 686-688 and 812-814
2/26 Wed	Vitamin A, part 1	Brasaemle	Chapter 30
3/3 Mon	Vitamin A, part 2	Brasaemle	Chapter 30
3/5 Wed	Vitamins D and K	Brasaemle	Chapters 31 & 28
3/10 Mon	**EXAM II**		
3/12 Wed	Folate, Vitamins B6 and B12, Part 1	Brasaemle	Chapter 25
3/17 – 3/12	**Spring Break!**		
3/24 Mon	Folate, Vitamins B6 and B12, Part 2 Pantothenate, Biotin, Choline	Brasaemle	Chapter 25 & 26
3/26 Wed	Niacin, Riboflavin, and Thiamin	Brasaemle	Chapter 24
3/31 Mon	Antioxidant mechanisms, Vitamin E and Carotenoids	Brasaemle	Chapter 29
4/2 Wed	Vitamin C	Brasaemle	Chapter 27
4/7 Mon	**EXAM III**		
4/9 Wed	Water and Electrolytes – Na, K, Cl	Anthony	Chapters 34,35
4/14 Mon	Macrominerals – Ca, P, Mg	Anthony	Chapters 32,33
4/16 Wed	Macrominerals – Ca, P, Mg	Anthony	Chapters 32,33
4/21 Mon	Trace Minerals – Fe	Anthony	Chapter 36
4/23 Wed	Trace Minerals – Cu, Zn, Mn	Anthony	Chapter 37
4/28 Mon	Trace Minerals – I	Anthony	Chapters 37,38
4/30 Wed	Trace Minerals – Se, Fl	Anthony	Chapters 39,40
5/5 Mon	Ultratrace Minerals	Anthony	Chapter 41
5/9 Fri	**EXAM IV**		

Professors and Teaching Assistant (office hours by appointment):
Dr. Dawn L. Brasaemle, e-mail: brasaemle@AESOP.Rutgers.edu phone: 732-932-6524
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REQUIRED TEXT: Biochemical and Physiological Aspects of Human Nutrition, By Martha H. Stipanuk, W. B. Saunders Publishers,3rd edition. Copies of the 3rd edition are on reserve in Chang library. Additional readings will be available online.

Class Notes and Study Questions:
Weekly class notes and study questions will be available online; you must bring your own copies of the weekly class notes with you. There may be occasional additional handouts in class.