11:709:401 Advanced Nutrition II: Energy and Micronutrients
T,F 10:55 am - 12:15 pm
Spring 2021 Syllabus

Day/Date	Topic	Professor	Textbook/ Readings
1/19 Tues	Energy/ Bioenergetics	Watford	Chapters 1, 10
1/22 Fri	Body Composition	Watford	Chapters 17, 20
1/26 Tues	Energy Expenditure I - Measurement	Watford	Chapters 17, 20
1/29 Fri	Energy Expenditure II - Regulation	Watford	Chapters 17, 20
2/2 Tues	Growth: Under- and Over-Nutrition	Watford	Chapters 17, 20
2/5 Fri	Obesity I	Watford	Chapters 17, 20
2/9 Tues	Obesity II-Food Intake/Case Studies	Watford	Chapters 17, 20
2/12 Fri	Dietary Reference Intakes & Water Balance	Anthony	Chapters 2, 32
2/16 Tues	**EXAM I – 1/19 - 2/9 material**	Watford	
2/18 Fri	Electrolytes – Na, K, Cl	Anthony	Chapter 31
2/23 Tues	Nutrient Regulation of Gene Expression	Anthony	Posted in Canvas
2/26 Fri	Iron	Anthony	Chapter 33
3/2 Tues	Zinc, Copper, Manganese	Anthony	Chapter 34
3/5 Fri	Iodine	Anthony	Chapter 35
3/9 Tues	**EXAM II – 2/12 - 3/5 material**	Anthony	
3/12 Fri	Selenium	Anthony	Chapter 36
3/13 – 3/21	**Spring Break!**		
3/23 Tues	Calcium, Phosphorus	Anthony	Chapter 29
3/26 Fri	Magnesium, Fluoride	Anthony	Chapters 30, 37
3/30 Tues	Vitamin K	Miller	Chapter 25
4/2 Fri	Vitamin D	Miller	Chapter 28
4/6 Tues	Vitamin A	Miller	Chapter 27
4/9 Fri	Antioxidant mechanisms, Vitamin E & Carotenoids	Miller	Chapter 26
4/13 Tues	**EXAM III – 3/12 - 4/6 material**	Anthony/Miller	
4/16 Fri	Vitamin C	Miller	Chapter 24
4/20 Tues	Niacin, Riboflavin, Thiamin, Pantothenate & Biotin	Miller	Chapter 21, 23
4/23 Fri	Vitamin B6, Folate & Vitamin B12	Miller	Chapter 22
4/27 Tues	Folate and Vitamin B12 (continued)	Miller	Chapter 22
4/30 Fri	Nutrigenetics and Nutrigenomics	Miller	Posted in Canvas
5/12 Wed	**EXAM I – 4/9 - 4/30 material**	Miller	

Professors and Teaching Assistant (office hours by appointment):
Dr. Malcolm Watford, e-mail : watford@sebs.rutgers.edu, phone : 848-932-7418
Dr. Tracy G. Anthony, e-mail: tracy.anthony@rutgers.edu, phone: 848-932-6331
Dr. Joshua Miller, e-mail: jmiller@sebs.rutgers.edu, phone: 848-932-5428
Teaching Assistant: Lingqiong Meng, e-mail: lm846@gsbs.rutgers.edu

RECOMMENDED TEXT: Biochemical, Physiological and Molecular Aspects of Human Nutrition, by Martha H. Stipanuk and Marie A. Caudill, W. B. Saunders Publishers, 4th edition (copyright 2019). Be aware the 4th edition chapter structure and content have changed significantly from the 3rd edition. Additional readings will be available online. **Please note: Biochemistry (either Introductory Biochemistry or General Biochemistry) is a prerequisite for this class**. You may be expected to consult your biochemistry textbook to refresh your memory of specific topics as they arise in class.

Class notes, Lectures and Study Questions:
Class notes, slide decks with and without audio, and study questions will all be available online in Canvas.

Office Hours: Each instructor will hold virtual Open Office Hours by Zoom. Available times and virtual conference links will be posted in Announcements in Canvas. Students may also schedule one-on-one Office Hours by emailing a request to the specific Instructor.

Readings: There is an optional and very helpful course associated with this class: Adv Nutr. II – Readings 11:709:403 taught by Lingqiong Meng on Mondays at 2:15-3:35 pm OR 3:55-5:15 pm. This readings class is intended to help with understanding the material through active learning and by reviewing relevant biochemistry topics. Each week, study questions will be distributed, some or all of which will be due as homework the following week. To receive a grade for this course, active participation in class discussions is assessed alongside submitted homeworks and/or quizzes. **These study questions are available to all students registered for 11:709:401.** Please contact the Teaching Assistant to avail yourself of these additional resources if you are having difficulty with the class material.

EXAM 4: Exam 4 will be held during the Final Exam period (Wednesday, May 12, 8-11 am) and is **not comprehensive**.

Learning goals:
Through lectures, readings and class discussions, students will gain
1. 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
2. an understanding of the dietary requirements, uptake, transport, metabolism and functions of vitamins and minerals
3. knowledge of the consequences of vitamin and mineral deficiencies and excessive uptake

Learning outcomes will be assessed through 4 exams:
Exam 1 – 140 points (Learning goal 1)
Exam 2 – 120 points (Learning goals 2 and 3)
Exam 3 – 120 points (Learning goals 2 and 3)
Exam 4 -- 120 points (Learning goals 2 and 3)
TOTAL – 500 points

Exams include multiple-choice, fill-in, true-false, and short essay questions.
The posted study questions posted serve as an important guide to the material that will be tested.

Please note: There will be no additional last-minute extra credit assignments at the end of the semester. Please pay attention to your exam performance and avail yourself of the many opportunities to get help in understanding the material through attending all synchronous lecture and review sessions held by the Instructors and Teaching Assistant, reading the textbook chapters and any posted material, reviewing sample exams and answering available study questions, attending Open Office Hours or making one-on-one appointments with the Instructors and/or the Teaching Assistant for extra help.

NOTES ABOUT MISSED EXAMS:
Make-up exams may be granted under exceptional circumstances. It is the student's responsibility to contact the instructor prior to or within 24 hours of the missed exam to request and arrange a make-up exam date and time. Instructor approval is required to take a make-up exam. Requests related to vacations or social gatherings will not be granted approval.

POLICY ON THE USE OF ELECTRONIC DEVICES IN THE CLASSROOM (WHEN IN PERSON):

Other than for note taking, the use of electronic equipment is prohibited during class. During exams, all electronic devices and peripherals, including but not limited to phones, watches and ear buds, should be taken off, turned off and placed out of access from your person.

Learning Goals for the Didactic Program in Dietetics:

2018 Core Knowledge for the RDN (KRDN) – The Rutgers University Department of Nutritional Sciences Undergraduate Didactic Program in Dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND). The following ACEND Core Knowledge Aptitudes are included within the curriculum of this course:

KRDN 1.1: Demonstrate how to locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions (i.e., active learning via discussions of case studies; exams).

KRDN 1.2: Use current information technologies to locate and apply evidence-based guidelines and protocols (i.e., active learning via discussions of case studies; exams).

KRDN 1.3: Apply critical thinking skills (i.e., active learning via discussions of case studies; exams).

KRDN 2.3: Assess the impact of a public policy position on nutrition and dietetics practice (i.e., active learning via discussions of case studies; exams).

KRDN 3.5: Describe basic concepts of nutritional genomics (i.e., active learning via discussions of case studies; exams).