

**11:709:401 Advanced Nutrition II: Energy and Micronutrients**  
**M/Th at 12:10-1:30 pm in the Art History Bldg., room 200**  
**Spring 2023 Syllabus**

Day/Date	Topic	Instructor	Recommended Readings
1/19 Thu	Course Introduction & DRIs	Anthony	Chap 2 & Canvas
1/23 Mon	Water Balance	Anthony	Chap 32 & Canvas
1/26 Thu	Electrolytes – Na, K, Cl	Anthony	Chap 31 & Canvas
1/30 Mon	Nutrient Regulation of Gene Expression	Anthony	Chap 15 & Canvas
2/2 Thu	Iron	Anthony	Chap 33 & Canvas
2/6 Mon	Zinc, Copper, Manganese	Anthony	Chap 34 & Canvas
2/9 Thu	Iodine	Anthony	Chap 35 & Canvas
2/13 Mon	<b>EXAM I – 1/19 - 2/6 material</b>	Anthony	
2/16 Thu	Selenium	Anthony	Chap 36 & Canvas
2/20 Mon	Calcium, Phosphorus	Anthony	Chap 29 & Canvas
2/23 Thu	Magnesium, Fluoride	Anthony	Chap 30, 37 & Canvas
2/27 Mon	Vitamin K	Miller	Chap 25 & Canvas
3/2 Thu	Vitamin D	Miller	Chap 28 & Canvas
3/6 Mon	<b>EXAM II – 2/9 - 3/2 material</b>	Anthony/Miller	
3/9 Thu	Vitamin A & Carotenoids	Miller	Chap 27 & Canvas
3/13 – 3/17	<b>Spring Break</b>		
3/20 Mon	Antioxidant mechanisms, Vitamin E & Vitamin C	Miller	Chap 24, 26 & Canvas
3/23 Thu	Vitamin B6, Folate & Vitamin B12	Miller	Chap 22 & Canvas
3/27 Mon	Folate and Vitamin B12 (continued)	Miller	Chap 22 & Canvas
3/30 Thu	Nutrigenetics and Nutrigenomics	Miller	Canvas & Canvas
4/3 Mon	Niacin, Riboflavin, Thiamin, Pantothenate & Biotin	Miller	Chapters 21, 23 & Canvas
4/6 Thu	Fundamentals of Energy Metabolism and Body Composition	Hoffman	Posted in Canvas
4/10 Mon	<b>EXAM III – 3/9 - 4/3 material</b>	Miller	
4/13 Thu	Human Energy Metabolism	Hoffman	Chap 17 & Canvas
4/17 Mon	Human Body Composition	Hoffman	Chap 17 & Canvas
4/20 Thu	Energy Balance I: Obesity	Hoffman	Chap 17 & Canvas
4/24 Mon	Energy Balance I: Undernutrition	Hoffman	Chap 20 & Canvas
4/27 Thu	Growth and Energy Metabolism	Hoffman	Chap 20 & Canvas
5/1 Mon	DOHAD	Hoffman	Posted in Canvas
5/4 Thur 8-11 AM	<b>EXAM IV – 4/6 - 5/1 material</b>	Hoffman	

**PROFESSORS AND TEACHING ASSISTANT (office hours by appointment):**

Dr. Tracy G. Anthony, e-mail: [tracy.anthony@rutgers.edu](mailto:tracy.anthony@rutgers.edu)

Dr. Daniel Hoffman, e-mail : [dhoffman@sebs.rutgers.edu](mailto:dhoffman@sebs.rutgers.edu)

Dr. Joshua Miller, e-mail: [jmiller@sebs.rutgers.edu](mailto:jmiller@sebs.rutgers.edu)

Teaching Assistant Matthew Selby, e-mail: [mls450@sebs.rutgers.edu](mailto:mls450@sebs.rutgers.edu)

**RECOMMENDED REFERENCE TEXT: Biochemical, Physiological and Molecular Aspects of Human Nutrition**, by Martha H. Stipanuk and Marie A. Caudill, W. B. Saunders Publishers, 4<sup>th</sup> edition (copyright 2019). 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, most slide decks with and without audio after lecture, lecture objectives, study questions, and practice exams will all be available online in Canvas. Lectures (synchronous or in-person) will **not** be recorded by the Professors.

**OFFICE HOURS:** Students may schedule one-on-one Office Hours by emailing a request to the specific Instructor. Office hours may be held over Zoom or in person.

**OPTIONAL READINGS COURSE:** There is an optional and very helpful course associated with this class: Adv Nutr. II – Readings 11:709:403 taught by Matthew Selby on Mondays at 2:00 – 3:20 pm OR 3:50 – 5:10 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.

### **LEARNING GOALS:**

Through lectures, readings 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 deficiencies and excessive uptake
3. an understanding of the physiological basis of human energy expenditure and body composition with a focus on endocrine and environmental factors that regulate food intake and energy metabolism and how various nutritional states (starvation, obesity) affect body composition and energy metabolism

**EXAMS:** Learning outcomes will be assessed through 4 exams and online work for Unit 3, Energy and Body Comp. Exams contain multiple-choice, fill-in, true-false, and short essay questions. There will be an opportunity on each exam to earn extra credit. All exams will be held in the classroom and will be closed book, closed notes, and conducted in the Canvas site with LockDown Browser enabled. All students are expected to bring a laptop computer with LockDown Browser installed and tested before each exam. Students must also bring their student ID or other official identification card to verify their identity upon entering and exiting the room on exam day.

Exam 1 – 120 points (Learning goals 1 and 2)

Exam 2 – 120 points (Learning goals 1 and 2)

Exam 3 – 120 points (Learning goals 1 and 2)

Exam 4 -- 140 points (Learning goal 3)

TOTAL – 500 points

Exam 4 will be held during the Final Exam period and is **not comprehensive**. Online Final exam Schedule: <http://finalexams.rutgers.edu/>

Study questions or topic objectives will be posted with every lecture and they serve as an important guide to the material that will be tested.

## Grading Scale:

The course grade is based on the total number of points earned on exams. You are encouraged to monitor your exams grades and use this information to help you maintain or improve subsequent exam scores in order to achieve the desired grade.

Grade	Point Range	Percentage
A	500 – 450	100-90
B+	449 - 425	89-85
B	424 - 400	84-80
C+	399 - 375	79-75
C	374 - 350	74-70
D	349 - 300	69-60
F	< 300	<60

**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, and making one-on-one appointments with the Professors and/or the Teaching Assistant for extra help.

### NOTES ABOUT MISSED EXAMS:

Make-up exams may be granted only 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 and the student must be prepared to take the make-up within 1 week following the missed exam. Requests related to vacations or social gatherings will not be granted approval. Failure to follow these guidelines will result in a grade of F (0 points) on the missed exam.

### POLICY ON THE USE OF ELECTRONIC DEVICES IN THE CLASSROOM AND DURING EXAMS:

Please restrict the use of electronic equipment during class to note taking, content learning and exam completion. During exams students are not allowed access to any electronics or electronic devices of any kind other than a laptop with browser lockdown installed. All electronic devices including earphones, smart watches and cell phones must be turned off and put away during exams. During exams students are also not allowed access to lecture material or anything related including textbook, personal notes, websites, etc.

### 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 problems; exams).

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

KRDN 3.5: Describe concepts of nutritional genomics and how they relate to medical nutrition therapy, health and disease. (i.e., active learning via discussions of case problems; exams).

## **ACADEMIC INTEGRITY**

The university's policy on Academic Integrity is available at <https://academicintegrity.rutgers.edu/>

Any violation of academic integrity including cheating and plagiarism will NOT be tolerated and will be handled according to the policies in place at Rutgers University. Based on severity students in violation may face course failure, suspension, or expulsion.

## **DIVERSITY, EQUITY, INCLUSION AND BELONGING STATEMENT**

The Department of Nutritional Sciences supports an inclusive learning environment wherein diversity and authenticity are valued. We are committed to creating a culture of belonging that respects the diverse voices of our students, faculty, and staff. We will continuously strive to create a curriculum and academic environment to reflect the community we serve while promoting excellence in innovation.

SEBS strives to be inclusive of all individuals regardless of race/color, national origin/ancestry, religion, age, sex/gender identity and expression, disability, genetic information, marital status, economic status, and veteran or military-affiliated status.

## **STUDENT WELLNESS SERVICES**

### **Counseling, ADAP & Psychiatric Services (CAPS)**

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/

<http://health.rutgers.edu/medical-counseling-services/counseling/>

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

### **Violence Prevention & Victim Assistance (VPVA)**

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

### **Disability Services (ODS)**

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site.