

HUN4221
Nutrition & Metabolism
Spring 2021 – Sections 2C05 (in class) & ON12 (online)

Instructor: Mitchell D. Knutson, PhD
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Office hours: As needed per request. Please e-mail me to schedule an appointment. *For questions about course material, please contact teaching assistants first.*

**Teaching assistants:
(and office hours)** Qingli Liu (qingli2015@ufl.edu); Room 459 FSHN
Saiid Barker (saiidbarker@ufl.edu); Room 459 FSHN
Office hours are as needed, per request via email.

Class location and meeting times: Tue: Period 4 (10:40 – 11:30 am), LIT0121, Room 0211
Thurs: Period 3–4 (9:35 – 11:30 am), LIT0201, Room 0211

Attendance: Required; synchronous; in class or via ZOOM
Credits: 3

Course Description and Prerequisites: The course focuses on the metabolism, requirements, deficiencies, and excesses of nutrients. Essential micronutrients will be covered with the greatest emphasis on vitamins and minerals. Nutrient utilization will be traced from the food source to digestion and absorption, transport, storage, and excretion. Each metabolic pathway dependent on specific nutrients will be evaluated with an emphasis on how the vitamin or mineral facilitates specific biochemical functions.

The basis of how nutrient deficiencies and excesses result in metabolic abnormalities with functional and potentially toxic consequences will be detailed. Amounts required in the diet to maintain normal metabolic pathways will be discussed. Concepts related to reducing the risk for chronic diseases and birth defects will be highlighted. The validity of health claims for key nutrient supplements will be critiqued by evaluating the metabolic basis and current research.

Prerequisites: (BCH 3025 or BCH 4024) and (PCB 4723C or APK 2105C) and (HUN 3403 and HUN 4445).

Course Learning Objectives: By the end of this course, students will be able to

1. Specify the roles of each nutrient and their respective metabolic pathways.
2. Explain the mechanisms of digestion and absorption for each nutrient.
3. Interpret deficiency and toxicity symptoms associated with each nutrient.
4. Examine published research on human nutrition and metabolism.
5. Formulate evidence-based rationales for potential solutions to questions in nutrition

This course uses the e-Learning (Canvas) system for postings of various class materials, as well as scores for exams and other assignments. Access to e-Learning requires a Gatorlink account. To establish a Gatorlink account, go to <http://www.gatorlink.ufl.edu/>. Once you have created an account, access the e-learning homepage at <http://elearning.ufl.edu/>. Continue with e-Learning Login using your Gatorlink ID.

Lecture Notes and Exams

Class lecture notes will be posted in Canvas by 7:00 PM the day before the lecture is to be presented so students can download the lectures and have them available for class.

Recommended textbook: None. Online supplemental resources will be posted in e-Learning.

Class Attendance and Demeanor: Students are expected to attend all classes, to arrive on time and to leave when dismissed by the instructor. Students are expected to show courtesy to their classmates and instructor by turning cell phone ringers off before the class period begins and refraining from engaging in conversations during class unless directed to do so by the instructor. For questions regarding attendance policies, please see UF Attendance Policy: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Our class sessions will be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

COVID-19 Response Statements

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 click here for guidance from the CDC on symptoms <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> ; please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here <https://coronavirus.uflhealth.org/screen-test-protect/covid-19-exposure-and-symptoms-who-do-i-call-if/> for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.

Student Evaluation: Three exams and ten quizzes will be used to evaluate student performance. Each exam will be worth 100 points and will cover approximately one-third of the semester's course content. Exams and quizzes must be taken when scheduled. **Exams and quizzes will be online via Honorlock.** Absence from an exam or quiz will result in a grade of "0" unless there are unavoidable extenuating circumstances (subject to our discretion) that can be documented to our satisfaction. Extenuating circumstances include unavoidable, unplanned situations such as illness (chart note from physician or clinic; vague notes such as "was seen" are not acceptable); family death (dated obituary); accident (police report); etc. **Make up exams will NOT be given.** An excused, documented absence from an exam will result in the grade for the missed exam being calculated as the average of the other two exams.

Ten 10-point quizzes will be given. **Make up quizzes will NOT be given.** The lowest quiz grade will be dropped and nine quiz grades will be counted towards the final grade. A missed quiz will count as the dropped quiz. Any other missed quizzes will result in a grade of "0" unless there are unavoidable extenuating circumstances as mentioned above or you have an interview at a professional school, which also will require documentation. An excused, documented absence from a quiz will result in the grade for the missed quiz being calculated as the average of the other quizzes.

Periodic bonus points may be given on unscheduled dates to check attendance. Bonus points will be added to total points at the end of the semester. **There will be NO make-up bonus points even if the absence is excused.**

Performance Indicators	Points
EXAM 1	100
EXAM 2	100
EXAM 3 (includes cumulative component)	100
10 QUIZZES	100
Total	400

Grading scale:

A = 370-400 A- = 358-369 B+ = 346-357 B = 330-345 B- = 318-329 C+ = 306-317
 C = 290-305 C- = 278-289 D+ = 266-277 D = 250-265 D- = 238-249 E = <238

Grades are not curved and are not negotiable. Should you have concerns or questions about your performance in the class, please see your Instructor or Teaching Assistant as soon as possible. ***Do not wait until the end of the semester!***

Current UF Grading Policies

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.aa.ufl.edu/students/> . Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-results/>.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <https://sccr.dso.ufl.edu/process/student-conduct-code/>.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- **University Counseling & Wellness Center**, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Training Programs
Community Provider Database
- **Career Resource Center**, First Floor JWRU, 392-1601, www.crc.ufl.edu/
- **U Matter We Care**, <https://umatter.ufl.edu/>
- **Career Connections Center**, First Floor JWRU, 392-1601, <https://career.ufl.edu/>.

Student Complaints:

- Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.
- Online Course: <https://distance.ufl.edu/student-complaint-process/>

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Other Information

Lecture materials and other information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take exams.

We the members of the University of Florida community pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Class Schedule (Subject to change)

T, period 4 LIT0121

R, periods 3- 4 LIT0201

Date	Topic
Week 1	
January	12 Tue Course Introduction
	14 Thur Folate (2 lectures)
Week 2	
19 Tue	Vitamin B12 Quiz 1- Folate
21 Thurs	Vitamin B12; Vitamin B6
Week 3	
26 Tue	Thiamin (Vitamin B1) Quiz 2- B12 & B6
28 Thurs	Riboflavin (Vitamin B2); Niacin (Vitamin B3)
Week 4	
February	2 Tue Biotin Quiz 3- B1, B2, B3
	4 Thurs Ascorbate (Vitamin C); Vitamin E
Week 5	
9 Tue	Antioxidants
11 Thurs	Vitamin K; Exam review
Week 6	
16 Tue	EXAM 1 (Covers 12 lectures: Folate through Antioxidants)
18 Thurs	Vitamin A (2 lectures)
Week 7	
23 Tue	Vitamin D Quiz 4- Vit. A
25 Thurs	Vitamin D Assignments (No in-class meeting; video and paper assignments)
Week 8	
March	2 Tue Vitamin D Quiz 5- Vit. D
	4 Thurs Calcium; Phosphorus
Week 9	
9 Tue	Magnesium Quiz 6- Ca, P
11 Thurs	Zinc; Exam review
Week 10	
16 Tue	EXAM 2 (Covers 11 lectures: Vit K through Zinc)
18 Thurs	Iron (2 lectures)
Week 11	
23 Tue	Copper Quiz 7- Fe
25 Thurs	Selenium; Iodine
Week 12	
30 Tue	Electrolytes Quiz 8- Cu, Se, I
April	1 Thurs Carbohydrates (2 lectures)
Week 13	
6 Tue	Proteins Quiz 9- Electrolytes & CHO
8 Thurs	Proteins; Lipids
Week 14	
13 Tue	Lipids Quiz 10- PRO
15 Thurs	Special topic; Exam review
Week 15	
20 Tue	EXAM 3 (Covers 12 lectures: Iron through Special topic + cumulative)