

HUN4221
Nutrition & Metabolism
Spring 2026 – Section 2C07 (15898)

Instructor: Zhiyong Cheng, PhD
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Office hours: Tuesdays 3:00 – 4:00 pm (in person/via Zoom)
or by appointment via email.

Supervised teacher: Jinying "Clary" Yang (email: yang.jinying@ufl.edu)
Office hours: Mondays: 1:00 –2:00 pm by appointment; Office: FSHN 265

Class location and meeting times: MCCA 1142
M, W, F: Period 4 (10:40 AM - 11:30 AM)

Attendance: Required
Credits: 3

Course Description and Prerequisites: The course contents cover the metabolism, requirements, deficiencies, and excesses of nutrients, as well as how nutrient deficiencies and excesses result in metabolic abnormalities. 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. The metabolic pathway dependent on specific nutrients and the amounts required will be evaluated. 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.

This class is designed such that students are engaged in interactive and experiential learning to build problem-solving skills. It consists of lecturing and problem-based learning activities, during which students exercise critical thinking and solve problems with evidence-based rationales.

Prerequisites: BCH 3025 or BCH 4024; PET 2350C or PCB 4723C

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

1. Describe the role of each nutrient in their respective metabolic pathway.
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 to address questions.

Class Format: In person. This class fosters an atmosphere of interactive learning where students exercise critical thinking, applying knowledge and facts to solving complex problems. Pre-class materials (e.g., slides, chapters, or current research/review articles) will be posted at Canvas. Students will complete studying the pre-class materials to be ready for in-class discussion and problem-solving activities.

Recommended Text: Advanced Nutrition and Human Metabolism, 7th Ed., Wadsworth Cengage Learning, 2018. Class materials will be posted at Canvas. Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor. The instructor is only responsible for these instructional materials.

Attendance and Make-Up Work: Class attendance and participation are required. Make-up exams, assignments, and other work in the course are consistent with university policies: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>.

Student Evaluation:

The assessments include 24 charting assignments (2 points each), 4 closed-book exams (56 points each), an outreach project (100 points), and class participation (28 points). The charting assignments will be administered via Canvas and due before each class starts. The exams will be timed (50 min) and must be taken when scheduled. Each exam contains 22 'choose an answer among multiple choices' questions and 3 short-answer questions. The outreach project consists of 4 sections, and the detailed instructions and grading rubrics will be posted at Canvas. Class participation is highly valued and will be graded according to class attendance and contribution to class activities and discussions (see the grading rubrics on the next page). Three charting assignments can be dropped without penalty, and twenty-one assignment grades will be counted towards the final grade. A missed assignment will count as the dropped assignment. Any other (>3) missed assignments 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); or an interview at a professional school (official invitation), etc. Absence from an exam will result in a grade of "0" unless there are unavoidable extenuating circumstances (subject to our discretion) that can be documented to our satisfaction. An excused, documented absence from an exam will result in the grade for the missed exam being calculated as the average of the other exam grades.

Grade Breakdown	Points
Charting Assignments (2 points each x 24)	48
Exams (56 points x 4)	224
Outreach project (100 points)	100
Class participation	28
Total	400

Grading scale (Grades are not curved or negotiable; final grade in % other than arbitrary points)

A = 370-400 92.5-100%	A- = 358-369 89.5-92.25%	B+ = 346-357 86.5-89.25%	B = 330-345 82.5-86.25%	B- = 318-329 79.5-82.25%	C+ = 306-317 76.5-79.25
C = 290-305 72.5-76.25%	C- = 278-289 69.5-72.25%	D+ = 266-277 66.5-69.25%	D = 250-265 62.5-66.25%	D- = 238-249 59.5-62.25%	E = <238 <59.5%

Current UF Grading Policies

Please see the following link for information on grade point equivalencies:
<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Instructor-Initiated Recording of Class: Our class sessions may 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.

In-class Recording by Students: Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a

complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session. Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Attendance and Participation Rubric

Criteria	Unsatisfactory-Beginning	Satisfactory-Developing	Excellent-Accomplished	Total
Attendance* 3 absences are allowed with no questions asked/no penalty. Absences beyond 3 should receive prior approval(s).	2 points 6+ absences (unexcused)	4 points 3-5 absences (unexcused)	7 points Besides the 3 penalty-free absences, attended all class sessions or received approval for necessary absences	/7
Frequency	2 points Student does not initiate contribution & does not participate without prompting from the instructor.	4 points Student sometimes initiates contribution, but does so infrequently (fewer than half of the class sessions)	7 points Student initiates contribution in at least half of the class sessions	/7
Quality	2 points Comments are uninformative and lacking in appropriate terminology. Heavy reliance on opinion and personal taste.	4 points Comments are sometimes constructive, but not always relevant to the discussion. Student sometimes uses appropriate terminology.	7 points Comments are mostly insightful & constructive; student mostly uses appropriate terminology.	/7
	2 points	4 points	7 points	/7

Listening	Does not listen to others; regularly talks while others speak or does not pay attention while others speak; detracts from discussion; sleeps, etc.	Student is mostly attentive when others present materials and perspectives, but sometimes needs to be reminded of the class focus.	Student listens attentively when others present materials and perspectives, as indicated by comments that build on others' remarks, i.e., student hears what others say & contributes to the dialogue.	
				/28

Adapted from Carnegie Mellon

Academic Policies & Resources

Visit the link: <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

Campus Health and Wellness Resources

UF Whole Gator Resources: Visit <https://one.uf.edu/whole-gator/discover> for resources that are designed to help you thrive physically, mentally, and emotionally at UF.

Use of artificial intelligence (AI) tools: Note that AI-generated contents have serious issues with credibility and accuracy. If students use AI tools to prepare their assignments, it is the students' responsibility to ensure information credibility, acknowledge the AI assistance and sources, and abide by the UF Honor Code. A grade of zero may result from (i) failure to acknowledge the use of AI regardless of factual use of it, and (ii) use of fabricated information (including reference or citation). Per the UF Honor Code, a student must not use or present fabricated information, falsified research, or other findings if the student knows or reasonably should be aware that the information, research, or other finding is fabricated or falsified.

Course Evaluation: 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/>.

Software Use: All faculty, staff and students at 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.

Email: Students are required to check their email account(s) daily (at least Monday through Friday) and respond to course/program related requests, inquiries, etc. in a timely manner.

Cell Phones: Audio ringers on cell phones must be deactivated before entering the classroom. Cell phone use is not permitted during class time unless an instructor permits it as part of class activities.

Topics and Schedule: (subject to change)

Classes/Dates	Topics	Notes
1 (1/12, M)	Class overview	
2 (1/14, W)	Folate	
3 (1/16, F)	Folate	
4 (1/19, M)	Holiday - No class	
5 (1/21, W)	Vitamin B12	Project initiation (video) posted
6 (1/23, F)	Vitamin B12	
7 (1/26, M)	Vitamin B6	Part 1 – Quick reminder
8 (1/28, W)	Thiamin (Vitamin B1)	
9 (1/30, F)	Riboflavin (Vitamin B2)	
10 (2/2, M)	Niacin (Vitamin B3)	
11 (2/4, W)	Exam 1	
12 (2/6, F)	Biotin	
13 (2/9, M)	Ascorbate (Vitamin C)	Part 1 - Survey & Summary due @ 11:59 pm
14 (2/11, W)	Vitamin E	
15 (2/13, F)	Vitamin D	
16 (2/16, M)	Vitamin D	Part 2 – Quick reminder
17 (2/18, W)	Vitamin A	
18 (2/20, F)	Vitamin A	Schedule meetings in group with Dr. Cheng to discuss projects (during office hours, via Zoom)
19 (2/23, M)	Vitamin K	
20 (2/25, W)	Exam 2	
21 (2/27, F)	Calcium	
22 (3/2, M)	Phosphorus	Mar 3rd (Tue): project meeting during office hours
23 (3/4, W)	Magnesium	
24 (3/6, F)	Copper	
25 (3/9, M)	Iron	Mar 10 (Tue): project meeting during office hours
26 (3/11, W)	Iron	
27 (3/13, F)	Zinc	
28 (3/16, M)	Spring Break-no class	
29 (3/18, W)	Spring Break-no class	
30 (3/20, F)	Spring Break-no class	
31 (3/23, M)	Selenium	
32 (3/25, W)	Antioxidants	
33 (3/27, F)	Exam 3	
34 (3/30, M)	Iodine	

35 (4/1, W)	Electrolytes	
36 (4/3, F)	Carbohydrates	
37 (4/6, M)	Carbohydrates	Part 2 - Video due at 11:59 pm Videos shared w/ respondents
38 (4/8, W)	Lipids	
39 (4/10, F)	Lipids	Part 3 – Quick reminder
40 (4/13, M)	Proteins	Schedule presentations
41 (4/15, W)	Proteins	
42 (4/17, F)	Part 3 presentation I	
43 (4/20, M)	Part 3 presentation II	Part 4 – Quick reminder
44 (4/22, W)	Exam 4	
45 (4/24, F)	Reading day	
46 (4/27, M)	No class meeting	Part 4 – Community feedback & Project Reflection due at 11:59 pm