NUTRITION AND METABOLISM (HUN 4221)
SYLLABUS AND CLASS SCHEDULE
FALL SEMESTER 2025

Days: T/W/R **Time**: 11:45 a.m.-12:35 p.m. **Locations**: WEIM 1084 (T), WEIM 1094 (W), LEI 0207 (R)
Credits: 3 **Attendance**: Highly Recommended

INSTRUCTOR: Prof. James F. Collins; Food Science & Human Nutrition Department
Office (within lab): FSHN Bldg., Room 441A Phone: 352-294-3749 E-mail: jfcollins@ufl.edu
Office Hours: Tue/Wed, 1:00-2:00 p.m., or by prior arrangement

This course will utilize the e-Learning system for posting reading assignments, lecture slides, and scores on quizzes and exams (i.e., a gradebook). Access to e-Learning requires a Gator Link account. To establish a Gator Link account, go to https://login.ufl.edu/ and click on the 'Create Account' button on the top of the page. Once you have created an account, access the eLearning homepage at http://elearning.ufl.edu/. Continue with e-Learning login using your Gator Link username and password.

DESCRIPTION: This course focuses on requirements, metabolism, deficiencies, and potential toxicities of the essential nutrients, including vitamins and minerals. These nutrients function within biochemical pathways of carbohydrate, protein and lipid metabolism, which will be the focus of the last module of the course. Nutrient utilization will be traced from dietary sources to digestion and absorption, transport, storage, and excretion. Metabolic pathways dependent on individual nutrients will be evaluated with an emphasis on specific biochemical functions. The biochemical basis for how nutrient deficiencies and excesses result in metabolic perturbations with functional and potentially toxic consequences will be detailed. Amounts required in the diet to maintain normal metabolism will also be considered. Concepts related to reducing the risk for chronic diseases and birth defects will also be highlighted. The validity of health claims for key nutrient supplements will be critiqued by evaluating the metabolic basis for these claims and current research supporting or refuting them.

Prerequisites: BCH 3025 or BCH 4024; APK 2105C or PCB 4723C; HUN 3403 and HUN 4445

Learning Objectives for the Essential Nutrients:
1. Summarize dietary requirements in humans
2. Discuss deficiency and toxicity symptoms, highlighting groups at risk
3. Explain mechanisms of digestion, absorption, distribution, and utilization
4. Describe biochemical role(s) of essential nutrients in various metabolic pathways
5. Compare physiological functions and pathophysiological outcomes for each nutrient
6. List population subgroups that could benefit the most from various dietary supplements

TEACHING ASSISTANT: Li-Ying Kuo. M.S.; Email- liying.kuo@ufl.edu; Office Hours: Mondays, 9:00-10:30 a.m.; Fridays, 8:00-9:30 a.m. Location: FSHN bldg., room 433B.

Required Readings: Reading materials will be posted on e-Learning or links will be provided to online resources that support the in-class lecture materials. No textbook is required.

Lecture Recordings and Slides: Power Point files will be posted to e-Learning by the day prior to a given lecture for students' perusal. Classes will be recorded (Zoom), and recordings will be made available to students.

Student Evaluation: Four exams (350 pts), ten quizzes (90 pts) and 2 pre-quizzes (10 pts) will be used to evaluate student performance. Questions will be based upon information provided in class, in PowerPoint slides provided to students on each topic, and in required readings.

Exams: Exams will be worth 60-100 points, depending upon how many lectures are covered on a particular exam. A total of 350 points will be available from the 4 exams. Exams will be taken in class.

Quizzes: Ten, 10-point quizzes will be given. The lowest quiz score will be dropped, so 90 total points are available from the quizzes. Quizzes will be administered at the beginning of class.

Pre-quizzes: These unannounced (pre)quizzes will be given twice/semester- worth 10 total points. Pre-quizzes will occur only on days when a regular quiz or exam is NOT scheduled. These quizzes will be given at the beginning of class and will focus on material to be covered that day. Pre quizzes are intended to encourage students to review the lecture materials prior to class, to facilitate discussion, and to enhance learning and retention of information.

Makeup Policy: Absence from an exam / 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 a physician or clinic required; vague notes such as "was seen" are unacceptable); family death (dated obituary required); accident (police report required); etc. Alternate exams / quizzes may be arranged at the discretion of the instructor.

Additional opportunities to earn points: Periodic bonus points (BPs) may also be available on unscheduled days. Any bonus points earned will be added to the point total at the end of the semester. Written BP activities must be turned in prior to exiting the classroom (no emails). You must be physically present in the classroom to be eligible to receive bonus points. No makeups will be allowed on bonus points, even if an absence is excused.

Performance Indicators	Available Points
4 EXAMS (PT TOTAL VARIES)	350 PTS (EX 1 = 100 PTS; EX 2 = 60 PTS; EX 3 = 100 PTS; EX 4 = 90 PTS)
10 QUIZZES (10 PTS EACH)	90 PTS (LOWEST QUIZ SCORE DROPPED)
2 PRE (UNANNOUNCED) QUIZZES	10 PTS (5 POINTS EACH)
	450 TOTAL PTS

Final letter grades will be assigned according to total points earned

A = 450-414	A- = 413-405	B+ = 404-396	B = 395-369	B- = 368-360	C+ = 359-351
C = 350-324	C- = 323-315	D+ = 314-306	D = 305-279	D- = 278-270	E = ≤270

Final point calculation: (pts from exams + pts from 9 highest quizzes + pre-quiz pts + possible BPs)

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***! You will have until a subsequent exam to discuss issues related to a previous exam with the instructor or the class TA; so, for example, you must see us to discuss exam 1 prior to exam 2 being administered. The same applies for quizzes.

EXPECTATIONS: Regular and timely attendance is expected and encouraged. In our experience, students who attend class regularly and actively participate in class-related exercises typically earn higher grades at the end of the semester. You are responsible for all material presented in class, and for any assignments made for out-of-class work, including required readings posted on e-Learning or online.

Information related to Academic Policies, Academic Resources and Campus Health and Wellness Resources can be found here: https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/.

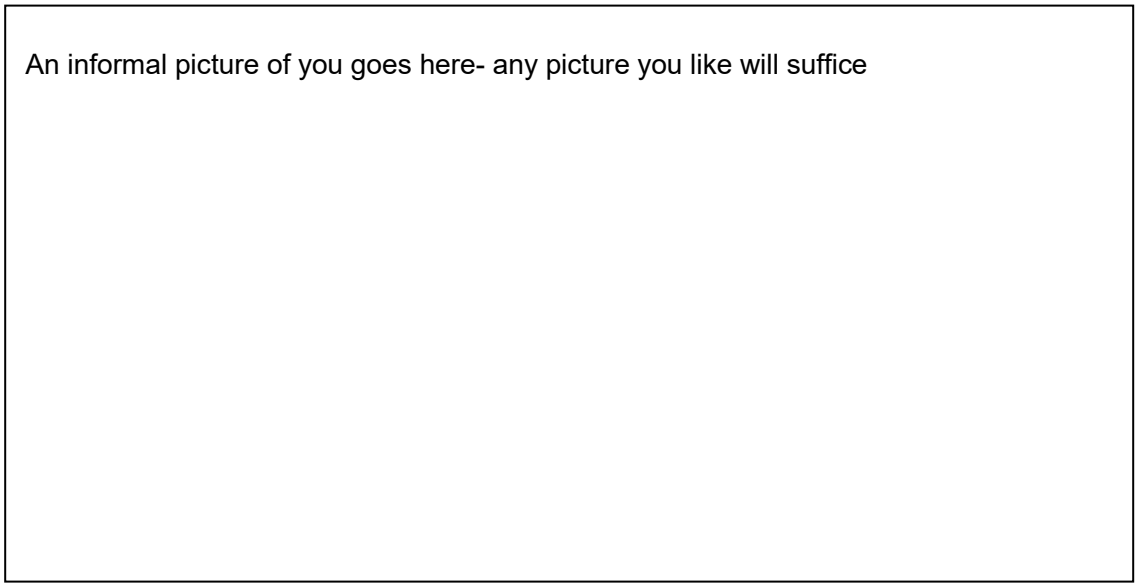
Course Communication: For questions about the course materials, please communicate directly with Dr. Collins or the course TA via email (please do not message us via eLearning). For technical issues, please contact the UF Computing Help Desk by phone at (352) 392-4357, or online at https://support.helpdesk.ufl.edu/.

CLASS SCHEDULE[#]

	AUGUST	21	R[†]	Course Intro	
MINERALS		26	T	Iron	
		27	W	Iron	
		28	R	Copper	
	SEPTEMBER	2	T	Zinc	
		3	W**	Selenium	**Q1 (Fe, Cu, Zn)**
		4	R	Iodine	
		9	T	Calcium	
		10	W**	Phosphorus	**Q2 (Se, I, Ca)**
		11	R	Magnesium	
		16	T	Electrolytes	
		17	W**	Exam Review	**Q3 (P, Mg, electrolytes)**
		18	R	**EXAM 1 (10 LECTURES = 100 POINTS)**	
FAT-SOLUBLE VITAMINS		23	T	Vitamin E	
		24	W	Vitamin D	
		25	R	Vitamin D	
		30	T**	Vitamin A	**Q4 (vitamins E, D)**
	OCTOBER	1	W	Vitamin A	
		2	R	Vitamin K	
		7	T**	Exam Review	**Q5 (vitamins A, K)**
		8	W	**EXAM 2 (6 lectures = 60 points)**	
WATER-SOLUBLE VITAMINS		9	R	Folate	
		14	R	Folate	
		15	T	Vitamin B_{12}	
		16	W	Vitamin B_{12}	
		21	T**	Vitamin B_6	**Q6 (Folate, B_{12})**
		22	W	Thiamin(B_1)	
		23	R	Riboflavin (B_2)	
		28	T**	Niacin (B_3)	**Q7 (B_6, thiamin, riboflavin)**
		29	W	Biotin	
		30	R	Vitamin C	
	NOVEMBER	4	T**	Exam Review	**Q8 (niacin, biotin, vit C)**
		5	W	**EXAM 3 (10 LECTURES = 100 POINTS**	
MACRONUTRIENTS		6	R	Carbohydrates	
		11	T	*Veterans Day (no class)*	
		12	W	Carbohydrates	
		13	R	Lipids	
		18	T	Lipids	
		19	W**	Proteins	**Q9 (CHOs, lipids)**
		20	R	Proteins	
		25	T	*Thanksgiving break (no class)*	
		26	W	*Thanksgiving break (no class)*	
		27	R	*Thanksgiving break (no class)*	
	DECEMBER	2	T**	Exam Review	**Q10 (Proteins)**
		3	W	**EXAM 4 (6 LECTURES = 60 PTS + COMPREHENSIVE = 30 PTS; 90 TOTAL PTS)**	

[#]Subject to change
[†]R = Thursday; T = Tuesday; W = Wednesday
**Quizzes will be given on these days

Student Information Sheet*



Name:

Major:

Hometown:

Hobbies/Interests:

One interesting/unique thing about you:

Grade you anticipate achieving in this course (circle one): A B C D E

Career Goals:

How will this class help you achieve these goals?

I understand everything on the syllabus, and further, if anything is confusing to me, I will ask the instructor or TA for clarification. Signed: _____ Date: _____

***Three bonus points may be earned if you give the completed form to Dr. Collins during office hours prior to exam 1. One bonus point may be earned by turning it in before/after class, or by emailing it before exam 1.