

**NUTRITION AND METABOLISM (HUN 4221)  
FALL SEMESTER 2016**

<b>Credits:</b> 3	Tuesdays	11:45 a.m.-12:35 p.m.	LIT 0101
<b>Attendance:</b> Required	Wednesdays	9:35 a.m.-10:25 a.m.	MCCB G086
	Thursdays	11:45 a.m.-12:35 p.m.	LIT 0101

**INSTRUCTOR:** James F. Collins, Ph.D., Associate Professor; Food Science & Human Nutrition Department Office: FSHN Bldg., Room 441A (inside the lab, 2<sup>nd</sup> door on the left); Phone: 294-3749; e-mail: [jfcollins@ufl.edu](mailto:jfcollins@ufl.edu); Walk-in Office Hours: Tuesdays from 1:30 p.m. to 3:30 p.m. **or by prior arrangement.**

This course will utilize 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.

**DESCRIPTION:** This course focuses on nutrient metabolism, requirements, deficiencies and potential toxicities. Essential macro- and micronutrients will be covered including carbohydrates, proteins, lipids, and vitamins and minerals. 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 basis of 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 be a focus of the course. 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 for these claims and current research supporting or refuting them.

**Prerequisites:** BCH 3025 or BCH 4024; APK2105C or PCB 4723C

**Learning Objectives** (for each nutrient):

1. Know the dietary requirements and outline mechanisms of digestion and absorption
2. Identify specific physiologic and pathophysiologic role(s) of each nutrient
3. Be familiar with the specific metabolic pathways in which each nutrient participates
4. Describe deficiency and toxicity symptoms associated with each nutrient
5. Know which population subgroups could benefit from certain dietary supplements

**TEACHING ASSISTANT:** Jennifer Dennis, Nutritional Sciences Doctoral Candidate. Office Hours: Wednesdays from 1:00-2:00 p.m. and Thursdays from 9:00-10:00 a.m. or by appointment. Location: FSHN Bldg., room 309. e-mail: [jennifercdennis@ufl.edu](mailto:jennifercdennis@ufl.edu)

**Recommended Readings:** **No textbook required.** Various online resources will be discussed in class.

**Lecture Notes:** Power Point files will be posted by 7:00 PM the day before the lecture is to be presented so students can download the slides and have them available for class.

**Student Evaluation:** Three exams and ten quizzes will be used, in-part, to evaluate student performance. The third exam includes a cumulative component. Each exam will be worth 100 points and will cover approximately one-third of the semester's course content. Exams must be taken when scheduled. 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. Extenuating circumstances include unavoidable, unplanned situations such as illness (chart note from physician or clinic required; vague notes such as "was seen" are not acceptable); family death (dated obituary necessary); accident (police report required); 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 outlined above) or you have an interview at a

professional school, which will also 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. Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. Bonus point activities may be given on unscheduled dates to allow students to earn extra points. Bonus points will be added to total points at the end of the semester. **There will be NO make-up bonus points even if an absence is excused.**

**PROJECT/PRESENTATION:** Each student will select one research paper from the primary literature relating to one of the topics in this course. The paper must be approved by the instructor in advance. The instructor will be available to assist the students with selecting papers and also for discussing the papers (during office hours). Students are to critically evaluate the paper and prepare a written report to be turned in no later than 11:45 a.m. on Nov. 29th. No late papers will be accepted. The report should be typed using Arial 11 point font, margins set to 0.5 inches, single-spaced and printed single-sided. The write-up should include the following sections: 1) a cover page with title, authors, journal name, issue, pg. numbers and date, place where study was conducted and source of funding; 2) introduction to the topic of research; 3) methods used; 4) results and conclusions; 5) critical evaluation (i.e. why do you think this is a good or bad study?); and 6) possible future studies. Do NOT simply paraphrase from the paper; put it in your own words. It is anticipated that these topics could be adequately covered in 2-3 pages, but the exact length is at your discretion. This assignment will be graded by the course instructor and the class TA. All papers will be compared to what is deemed as the best paper in the class and points will be awarded accordingly. 3 bonus points may be earned by turning in the project by 11:45 a.m. on Nov. 1st. All students will present their papers to the class on the days listed in the Class Schedule (below); the specific order of presentation will be determined randomly. Each student will be expected to prepare slides and will have 5-6 minutes to cover the highlights of their paper.

<b>Grading:</b>	<b>Activity</b>	<b>Points</b>
	Exams	300 (3 exams; 100 pts each)
	Quizzes	90 (9 quizzes for grades; 10 pts each)
	Project	60 (45 pts for the paper; 15 pts for the presentation)
	<b>TOTAL</b>	<b>450</b>

Final grades will be assigned according to total points earned:

<b>A</b> = 450-405	<b>B+</b> = 404-396	<b>B</b> = 395-360	<b>C+</b> = 359-351
<b>C</b> = 350-315	<b>D+</b> = 314-306	<b>D</b> = 305-270	<b>E</b> = 269 or less

**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. NOTE: No extra credit projects will be available. Use this link for information on current UF grading policies: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**EXPECTATIONS:** Regular attendance is expected and encouraged. You are responsible for all material presented in class, and for any assignments made for out-of-class work. If you miss a class, it is your responsibility to get lecture notes from another student.

**CLASSROOM POLICIES:** Noise from cell phones is a disruption to everyone in the classroom, and is disrespectful to the Instructor. Please set phones for silent ringing prior to entering the classroom. **The use of electronic devices during lecture is strictly prohibited. The only exceptions are for the use of laptop computers or smart phones for taking notes.** Please try to arrive in the classroom before class begins. Tardiness is disruptive to those students that arrive on time. As a courtesy to those around you, and to the Instructor, **please do not talk during lecture.** If you must discuss something with another student, please wait until the end of class or leave the classroom. Remember that eating, drinking, and smoking are not permitted in University of Florida classrooms. Students who habitually disregard these policies will be asked to leave the classroom.

**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://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.

### **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/](http://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/](http://www.crc.ufl.edu/)*

### **Services for Students with Disabilities** (0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/))

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.

**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.

**CLASS SCHEDULE#**

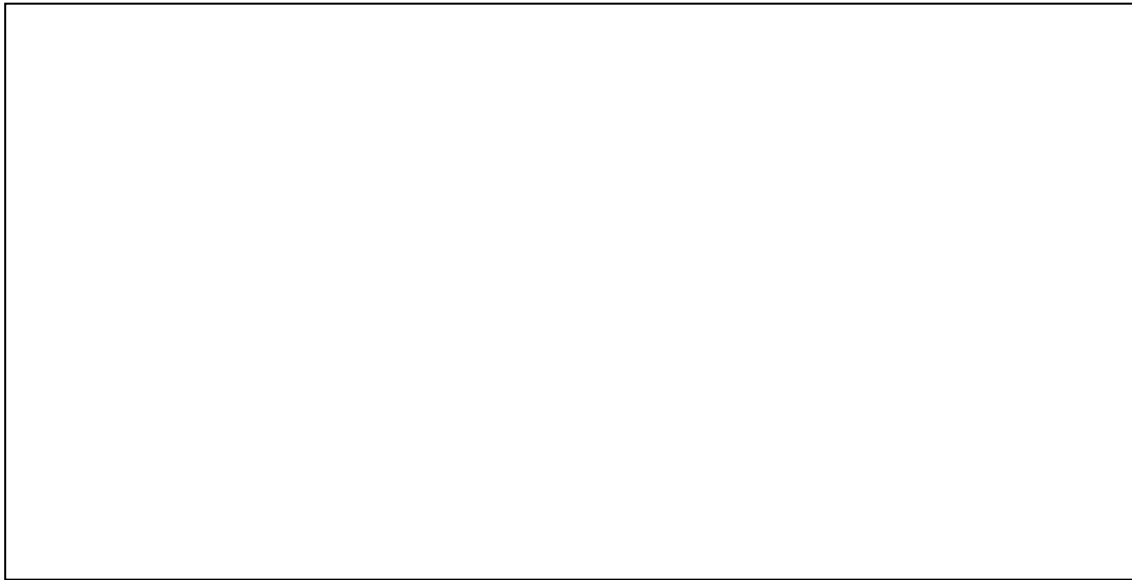
	<b>August</b>	23	T <sup>†</sup>	Course Intro	
		24	W	Nutrition & Intermediary Metabolism	
<b>I. WATER SOLUBLE VITAMINS</b>		25	R	Folate	
		30	T	Folate	
		31	W	Thiamin (B <sub>1</sub> )	
	<b>SEPTEMBER</b>	1	R**	Riboflavin (B <sub>2</sub> )	Q1 (Folate, B <sub>1</sub> )
		6	T	Niacin (B <sub>3</sub> )	
		7	W	Biotin	
		8	R**	Vitamin B <sub>12</sub>	Q2 (B <sub>2</sub> , B <sub>3</sub> , biotin)
		13	T	Vitamin B <sub>12</sub>	
		14	W	Vitamin B <sub>6</sub>	
		15	R	Vitamin C	
		20	T**	Review	Q3 (B <sub>12</sub> , B <sub>6</sub> , vit C)
		21	W	<b>EXAM 1</b>	
<b>II. FAT SOLUBLE VITAMINS</b>		22	R	Vitamin A	
		27	T	Vitamin A	
		28	W	Vitamin E	
		29	R**	Vitamin K	Q4 (vitamins A and E)
	<b>OCTOBER</b>	4	T	Vitamin D	
		5	W	Vitamin D	
		6	R**	Antioxidants	Q5 (vitamin K, D)
<b>III. MINERALS</b>		11	T	Calcium	
		12	W	Phosphorus	
		13	R**	OPEN	Q6 (antioxidants, Ca, P)
		18	T	Iron	
		19	W	Iron	
		20	R	Copper	
		25	T**	Review	Q7 (Fe, Cu)
		26	W	<b>EXAM 2</b>	
		27	R	Magnesium	
	<b>NOVEMBER</b>	1	T	Manganese	<u>Early Project Deadline</u>
		2	W	Zinc	
		3	R	Zinc	
		8	T**	Selenium (plus Cr)	Q8 (Mg, Mn, Zn)
		9	W	Iodine	
		10	R	Na, K, Cl (electrolytes)	
<b>IV. MACRONUTRIENTS</b>		15	T**	OPEN	Q9 (Se, Cr, I, electrolytes)
		16	W	Carbohydrates (CHO)	
		17	R	CHO	
		22	T	Lipids	
		23	W	<i>No Class</i>	
		24	R	<i>No Class</i>	
		29	T	Proteins	<b>PROJECTS DUE</b>
<b>V. STUDENT PRESENTATIONS</b>		30	W	Student Presentations	
	<b>DECEMBER</b>	1	R	Student Presentations	
		6	T	Student Presentations	
		7	W**	Review	Q10 (CHO, proteins, lipids)
		14	W	<b>EXAM 3</b> (5:30-6:30 p.m.)	

#Subject To Change

<sup>†</sup>T = Tuesday; W = Wednesday; R = Thursday

\*\*Quizzes given on these days

**Student Information Sheet\***



Please attach a picture of yourself to this box (note that you will not get your picture back).

**Name:**

**Major:**

**Hometown:**

**Hobbies:**

**Grade you expect to get in this course (circle one):** A B C D E

**Career Goals:**

**How will this class help you achieve these goals?**

**\*This information sheet is worth 1 bonus point if you hand it in during class and 3 bonus points if you hand it in during office hours before Exam 1.**