HDFN 521
METABOLIC ROLES OF NUTRIENTS
Fall 2007

Graduate Program in Nutrition
Department of Health and Human Development
Montana State University

INSTRUCTOR:	Christina Campbell, Ph.D., R.D.
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OFFICE HRS:	W 1-2; R 10-12
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CLASS HRS:	T/R 12:45-2
	Herrick Hall, Room 117
CREDITS:	3 semester hours

COURSE DESCRIPTION
Homeostatic integration of the micronutrients in the human cell and in various organ systems.

REQUIRED TEXTS:

Biochemical, Physiological, & Molecular Aspects of Human Nutrition, 2nd ed. Stipanuk MH. Saunders/Elsevier: St. Louis, MO, 2006

Additional articles will be posted via the library or available via e-journals.

OBJECTIVES: By the end of the semester, each student should be able to:

1) Describe the functions of specific micronutrients.
2) Describe the physiological impact of specific micronutrient deficiencies and/or toxicities.
3) Know the methods used in nutritional assessment and the limitations and advantages of each.
4) Understand for specific micronutrients the experimental evidence upon which the current adult DRI are based.
5) Be able to design experiments for the purpose of establishing and clarifying human nutrient requirements and allowances.
6) Be able to critically evaluate and abstract original research literature pertaining to specific micronutrients.

CLASS POLICIES:
1) All assignments are to be turned in at **THE BEGINNING OF CLASS ON THE DAY LISTED ON THE COURSE SYLLABUS**. Any assignment turned in after this time or at any other location will be graded late. A 10% penalty will be given per day the assignment is late.
2) Any student found cheating or plagiarizing will receive an “F” or “0” for the course and will be reviewed by the MSU Conduct Committee.

Behavioral Expectations
Montana State University expects all students to conduct themselves as honest, responsible and law-abiding members of the academic community and to respect the rights of other students, members of the faculty and staff and the public to use, enjoy and participate in the University programs and facilities. For additional information reference www2.montana.edu/policy/student_conduct/cg600.html

Collaboration
University policy states that, unless otherwise specified, students may not collaborate on graded material. Any exceptions to this policy will be stated explicitly for individual assignments. If you have any questions about the limits of collaboration, you are expected to ask for clarification.

Plagiarism
Paraphrasing or quoting another's work without citing the source is a form of academic misconduct. Even inadvertent or unintentional misuse or appropriation of another's work (such as relying heavily on source material that is not expressly acknowledged) is considered plagiarism. If you have any questions about using and citing sources, you are expected to ask for clarification.

Academic Expectations
Section 310.00 in the MSU Conduct Guidelines states that students must:

A. be prompt and regular in attending classes;

B. be well prepared for classes;

C. submit required assignments in a timely manner;

D. act in a respectful manner toward other students and the instructor and in a way that does not detract from the learning experience; and

E. make and keep appointments when necessary to meet with the instructor.

STUDENT EVALUATION

There will be a total of 5 projects each worth 100 points to complete throughout the semester. These projects will range from reviewing and abstracting articles, to applied/critical thinking type questions to creating 1-page data sheets on the majority of the micronutrients covered. Each project will be worth 100 points with a possible maximum of 500.

Anytime you receive <76.9% on an assignment, you will be given the option to rewrite the necessary portions of the assignment. There will be an additional 50 points available from class participation and in-class presentations. These will be assigned as we progress through the semester.

Your projects will be graded heavily on your ability to accurately write about the findings of original research articles and what this means to YOU. I am NOT necessarily interested in the author's conclusion; rather I want information about YOUR opinion on

the study. What makes this a good or bad study, how could it be improved, why is it that you want ME to know about this specific research study. This course requires an **intense amount of reading and writing**. There will not be a final per se, but the last project and nutrient data sheets will be due during the University scheduled day of the final.

Each student will be required to lead a discussion. You will need to find 1 peer-reviewed journal article (original research study) published between 2005-07. Provide the citation of the article at least one week prior to your scheduled presentation. You will provide an overview of the paper and lead a group discussion. You will be graded on your overview and how well you lead the discussion (e.g. questions provided, motivating others to be involved, etc.) Thirty minutes will be allotted to this activity and it is worth 25 points.

You will be required to create (via the computer) a 1-page data sheet on each nutrient that is covered (excluding selenium, fluoride, biotin, bioactive food components, copper, iodine) for a total of 16 sheets (worth 100 points). **Do not** leave this for the end of the semester as the creation of these data sheets is intended to help you synthesize the information. Be concise and organized in the presentation of this information. These data sheets should be a great reference tool for you in the future.

Included on each data sheet should be the following but is not limited to:

- DRI for adult men and women including upper limit where applicable;
- Function of nutrient;
- Applicable metabolic pathways;
- Assessment measurements and acceptable ranges;
- Deficiency and toxicity symptoms;
- 5 good sources of the micronutrient, serving sizes and nutrient content

TOTAL POINTS FOR THE COURSE: ~550 pts

GRADING:
Grades will be based on the following percentages of the total possible points in the course. No curving or other adjustments of the grades will be made. Summing the points from the test(s) and projects and applying the percentages listed above will determine course grade.

100 – 93 = A (4.0)	76.9 – 73 = C (2.0)
92.9 – 90 = A- (3.7)	72.9 – 70 = C- (1.7)
89.9 – 87 = B+ (3.3)	69.9 – 67 = D+ (1.3)
86.9 – 83 = B (3.0)	66.9 – 60 = D (1.0)
82.9 – 80 = B- (2.7)	Below 60 = F (0.0)
79.9 – 77 = C+ (2.3)	

MSU-Bozeman Graduate Program requires a B (3.0) or better

Tentative Course Outline:

Date	*Topic*	*Reading*	*Assignment due*
T 8/28	Overview/Review		
R 8/30	DRI's	Handouts C. 1 C. 3 p47-50	
9/4-6	Genetics Overview Essential Fatty Acids	Handouts C. 18	Digestion/Absorption reference sheet due
9/11-13	Vitamin A/Zinc	C. 30 C. 37 (appropriate pgs on Zn)	*9/11: Rochelle-EFA & DM*
9/18-20	Vitamin E/Selenium	C. 29 C. 39	*9/20: Lindsey-gamma-tocopherol & CVD*
9/25-27	Vitamin D/Calcium	C. 31 C. 32 (appropriate pgs on Ca)	**Project Due 9/27 (EFA-Zn)**
10/2-4	Phosphorus/Magnesium/Fluoride	C. 32 (appropriate pgs on P) C. 33 C. 40	*10/2: Sarah-vit D & osteoporosis*
10/9-11	Vitamin K/Biotin	C. 28 & C. 26 (p. 746-59)	
10/16-18	Electrolytes	C. 34-35	**Project Due 10/18 (E-Fl)**
10/23-25	B vitamins	C. 24	*10/23: Katie - K^+ & CVD*
10/30-11/1	Vitamin B6/vitamin C	C. 25 (appropriate pgs on B6) C. 27	*10/30: Laura W. (B-complex & stress)*
11/6-13	Folate/B12	C. 25	**Project Due 11/8 (K-C)**
11/8-20	Bioactive Food Components	C. 2	*11/13:_____ (flavonoids & CA)*
11/22	Thanksgiving-no class		
11/27-29	Iron/Copper/Iodine	C. 36 C. 37 (appropriate pgs on Cu) C. 38	
12/4-6	Application of vitamins & minerals		**Project Due 12/6 (folate-I)**
12/14	Final exam 2-3:50		**Nutrient Hand-outs**