BIOLOGY 194
INTRODUCTION TO HUMAN NUTRITION
Spring 2013; 3 Credits
Time: T/TR 11:30-1
Location: TBD
CRN: 39178

Prerequisites: ENGL F111X or higher; placement in DEV F105 or higher; or permission of instructor. May not be used as a biology elective credit for a major in biological science.

Instructor Information
Andrea Bersamin, Ph.D.
Email: aberesamin@alaska.edu
Office: 234 AHRB
Telephone: (907)474-6129

Office Hours
By appointment. If you have questions about the class or would like to discuss your class performance, I encourage you to come and see me.

Course Description
An Introduction to Human Nutrition provides students with an understanding of basic nutritional science and how the principles of nutrition can be used to achieve and maintain optimum health and well-being. Students will consider their own food choices in light of the scientific concepts covered in class.

Course Goals
To provide students with an overview of the fundamentals of human nutrition science.

Learning Objectives
Upon completion of this course, you will be able to do the following:

- Understand how the Dietary Guidelines, Recommended Dietary Allowances (RDA’s) and Food Guide Pyramid are used in planning healthy diets for individuals and groups.
- Understand and describe the basic functions, food sources and human requirements of nutrients.
- Understand the digestion, absorption and transport of nutrients.
- Describe the factors influencing energy balance and describe the effectiveness of various weight loss and maintenance strategies.
- Evaluate personal dietary intakes and practices for nutritional adequacy and recommend strategies for improvements.
- Understand the role of nutrition in health promotion and disease, particularly chronic disease prevention.
- Describe nutrition issues surrounding food safety and other consumer concerns.
- Demonstrate an understanding of the role of food choice in promoting personal, community and environmental health.
- Demonstrate an understanding of the scientific process and apply it to current issues in health and nutrition.
Instructional Methods
The course will include lectures, class discussion, in-class activities, text book and journal article readings, and assignments. Student participation is important and this requires that all students come prepared having read the required readings in advance.

This class will focus on teaching scientific concepts in addition to exploring personal decision-making. My goal is for you to consider your own food choices in light of the knowledge you are gaining.

Course Readings
Required:
- Additional readings will be assigned to supplement the main textbook or as part of various homework assignments; these will be made available on Blackboard.

Some useful websites:
Dietary Guidelines for Americans http://health.gov/dietaryguidelines/
My Plate http://www.choosemyplate.gov/
Linus Pauling Institute Micronutrient Information Center http://lpi.oregonstate.edu/infocenter/
American Dietetic Association www.eatright.org
American Society for Nutritional Sciences www.asns.org
ILSI Human Nutrition Institute http://hni.ilsi.org
American Heart Association www.americanheart.org/
American Diabetes Association www.diabetes.org/

Student Evaluation
Points Possible:

<table>
<thead>
<tr>
<th>Task</th>
<th>Points Possible</th>
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<tbody>
<tr>
<td>Exams</td>
<td>3 @100 points</td>
</tr>
<tr>
<td>Personal nutrition and physical activity portfolio</td>
<td>100 points</td>
</tr>
<tr>
<td>Reaction cards</td>
<td>2 point each (maximum of 20pts)</td>
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<tr>
<td>Chapter quizzes</td>
<td>5 points each (maximum 50 points)</td>
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Total Possible Points: 470

Grades will be on a straight percentage basis.
A= 94-100%; A-=90-93.9%
B+= 87-89.9%; B= 84-86.9% ;B- = 80-83.9%
C+= 77-79%; C= 74-76.9% ; C-= 70-73.9 %
D+= 67-69%; D = 64-66.9%; D- = 60-63.9%
F= 59% and below
**Instructor and course evaluation:**

Teaching is a learning process and it is impossible to facilitate learning without student feedback. I will be gathering feedback throughout the semester that will allow me to address problems or difficulties while the course is on-going. Unsolicited constructive feedback is welcome anytime.

**Course Requirements**

**Exams:** There will be 3 in-class exams. Exams will include T/F, multiple-choice, matching, short answer and essay questions. Exams will be based on lectures, readings, labs and assignments. There will be NO make-up exams. Under very unusual circumstances early exams will be offered with approval from the instructor; arrangements must be made well in advance.

**Chapter quizzes:** There will be 11 chapter quizzes (5 points each) that will be administered on Blackboard. Only your top 10 scores will be used to calculate your final grade so you can miss one quiz. In otherwords, 50 (5 x 10) is the maximum number of points you can receive on the chapter quizzes. The quizzes are open note, open book and are designed to review a chapter’s key concepts.

**Personal nutrition and physical activity portfolio (PNPP):** The PNPP is a series of exercises and activities that are designed to have you think about your food and activity choices and attitudes in light of the scientific concepts covered in class. The PNPP is designed to be completed over the course of the semester both at home (homework) and in class. Exercises and activities will include:

- **Health checks:** Activities will guide you to “check” your own behavior or health status based on the lesson content
- **Healthy lifestyle challenges:** Activities will provide ideas for new foods and activities that relate to the lesson content
- **Current controversies:** Activities will encourage you to consider two sides of a debate that relates to the lesson content and decide what side you’re on
- **Systems thinking:** Activities will encourage you to consider how your food and activity choices impact society and vice versa. Specifically you will explore the links between food choice and personal, community, and environmental health. You will also consider how local, state, and federal policies affect healthy eating and physical activity.

**Readings:** In-class discussions and activities will require that you have completed the required readings. The course reading list is included in the syllabus. Additional readings (e.g. newspaper articles, journal articles, policy briefs, etc.) will be assigned throughout the semester and will be provided as hand-outs or posted on Blackboard. *Student participation is important and this requires that all students come prepared having read the required readings in advance.*

**Reaction cards:** 2 point each for a maximum of 20 points

At the end of each class session on Thursdays, please write a short (two to three sentences) question or comment pertaining to the class discussion or provide feedback on how the class is going for you. Write your comment or question on a 3x5 card with your full name and date printed clearly at the top of the card. Please give your card to me before leaving the class. You are responsible for buying (or sharing with a friend) a pack of 3x5 cards to use for this purpose.
Current events (extra credit):
Throughout the course, you have the opportunity to earn up to ten extra credit points by bringing a newspaper or internet article related to a topic covered in class, summarizing its contents for the class, and providing a one paragraph written summary. Current events must have been published within the last year. You will earn five points for each current event article and summary. Written and oral summaries should, at minimum:
- State the objectives of the study
- Summarize the study design and findings
- Provide a copy of original article (if available) to me (preferably as a PDF)
- Provide your opinion on how the “average” reader will respond to the article. Will the article influence decision making or thinking? Does the article leave out any important information?

Course Policies

Communication: Announcements and schedule changes will be made by e-mail or on Blackboard. It is your responsibility to check your e-mail or Blackboard at least twice weekly. I encourage you to contact me with any comments or questions. If you don’t understand something please ask.

Attendance: Daily attendance and participation are expected.

Withdrawal:
Feb. 1: Deadline for 100 percent refund of tuition and fees
Feb. 1: Deadline for student-initiated and faculty-initiated drops (course does not appear on academic record)
Mar. 22: Deadline for student-initiated and faculty-initiated withdrawals (W grade appears on academic transcript)

Honor Code and Plagiarism: You are expected to uphold the UAF standard of conduct for students relating to academic dishonesty. You assume full responsibility for the content and integrity of the academic work you submit. For the student code or additional information, please use the following URL http://www.uaf.edu/catalog/current/academics/regs3.html

UAF Disability Services
Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities. **If you require any assistance due to documented disability, please let me know by the 2nd week of classes and I will be happy to make whatever accommodations are necessary.
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<th>Class Topic</th>
<th>Objectives</th>
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| Introduction to Nutrition—Food choices: Nutrients and nourishment | • Understand the factors that affect food choices.  
• Discuss the six classes of nutrients.  
• Explain how caloric nutrients, reported in grams, are converted to calories and percentages.  
• Identify various forms of nutritional studies and research. |
| Nutrition Guidelines: tools for designing a healthy diet | • Discuss the principles of Nutrition guidelines and assessment  
• Explain dietary standards and define the four standards that compose the dietary reference intakes (DRIs)  
• Describe the five mandatory components of a food label and discuss how food labels can be used to plan a healthful diet |
| Digestion, absorption and transport: from food to fuel | • Provide an overview of the structures, mechanisms, and processes of the gastrointestinal (GI) tract.  
• Review the physical and chemical processes involved in digestion and absorption  
• Explain how foods are transported after they are digested and absorbed  
• Describe and understand the roles of the assisting organs |
| Carbohydrates | • Describe the functions, types, food sources of carbohydrates  
• Explain the digestion and absorption of carbohydrate  
• Understand the AMDR for carbohydrates and key recommendations for carbohydrate intake in the Dietary Guidelines for Americans, 2010.  
• Discuss the role of carbohydrates in promoting health |
| Lipids | • Describe the functions, types, food sources of lipids  
• Explain the digestion and absorption of lipids  
• Discuss the different types of lipoproteins in the body.  
• Understand the AMDR for lipids, and the key recommendations for lipid intake in the Dietary Guidelines for Americans.  
• Discuss the role of lipids in promoting health |
| Proteins | • Describe the functions, types, food sources of protein  
• Explain the digestion and absorption of protein  
• Understand the AMDR for proteins and daily protein recommendations for all life stages.  
• Discuss the various aspects of protein quality and means to achieve adequate protein consumption within the diet for vegetarians and non-vegetarians.  
• Discuss the role of protein in promoting health |
| Energy Balance | • Discuss the regulation of food intake  
• Describe the major components of energy expenditure  
• Describe the major issues in defining and measuring body weight and |
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<th>Composition</th>
<th>Discuss the effects and implications of obesity</th>
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| Vitamins: vital keys to health | • Compare the water and fat soluble vitamins with respect to their function, digestion, absorption, transport, and requirements  
• Explain the function, food sources, and requirements of select vitamins  
• Define antioxidants and discuss their food sources and health benefits |
| Water and minerals | • Describe the functions of water and its recommended intake  
• Describe the difference between major and trace minerals  
• Explain the function, food sources, and requirements of select minerals |
| Food Safety | • Review major food safety hazards  
• Describe the government’s and the consumer’s role in keeping food safe  
• Simulate an investigation of a foodborne illness outbreak |
| Food Systems | • Describe the food system and food supply chain  
• Describe the relationships between food, health, justice and the natural and built environments |
| Physical activity | • Understand how nutrition and physical performance are interrelated, and differentiate between the various energy systems of the body.  
• Understand the role of carbohydrates, fats, and proteins for athletic performance.  
• Recognize specific vitamins and minerals, and their intended relationship to athletic performance.  
• Understand aspects associated with weight and body composition for athletes.  
• Describe physical activity recommendations |