

NUTR 411

Nutrition in Health and Human Performance

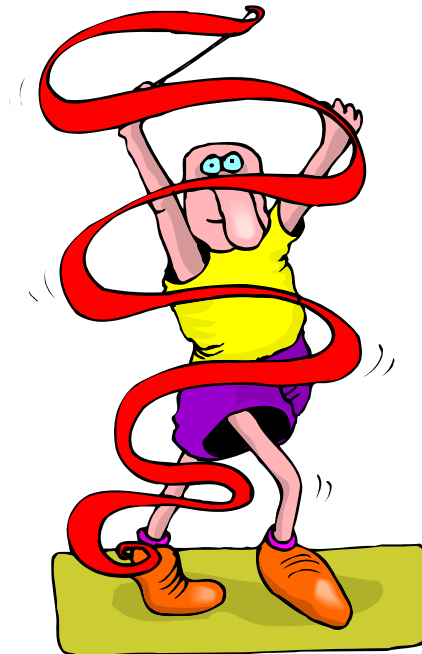


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Taught by:

Kathe A. Gabel, PhD, RD, CSSD
Department of Health and Human Performance

Spring Semester, 2012
College of Allied Health Professions
Montana State University – Billings

MSU – Billings
College of Allied Health Professions
Department of Health and Human Performance
Spring, 2012

Course Rubric & Title: NUTR 411 – Nutrition in Health and Human Performance
Instructor: Kathe A. Gabel, PhD, RD, CSSD
Office/Hours: PE 117, MW, 9:00 – 10:00 a.m., by apptmt
Phone: 406-657-2927
E-mail: kgabel@msubillings.edu
Class Times: MWF, 10:30 – 11:30 a.m.
Location: PE 54
E-mail for dept. information: <http://www.msubillings.edu/hhp/>

Required Text: Fink, Burgoon, & Mikesky (2011). *Practical Applications in Sports Nutrition*. USA: Bartlett & Brown.

Required Course Packet: Gabel, K. (2012) Course Packet for NUTR 411, MSUB Bookstore

Catalog Description: NUTR 411 (formerly HHP 432), Nutrition in Health and Human Performance, 3 cr.

Pre-requisite courses:

Biol 104 – Nutrition for Health Careers, or
Biol 221 – Human Nutrition, or
or a basic nutrition course.

Courses in anatomy, physiology, exercise physiology and biochemistry are also supportive of course content.

The course explores the relationships among nutrition, human behavior, epidemiology, and human performance. Course topics will include nutrition for disease prevention and treatment, obesity and weight control, eating for endurance and non-endurance sport performance, nutritional ergogenic aids, digestion, absorption and metabolism related to energy production, eating disorders, dietary analysis and prescriptions.

Course Goals:

Upon successful course completion, you will be able to:

1. List energy and macro/micro nutrient requirements during exercise and training.
2. List viable fluid/food intake programs for active adults prior to, during and after exercise or competition.
3. Discuss the purported effects of ergogenic aids on macro-nutrient metabolism and performance.
4. Identify characteristics and consequences of disordered eating in active individuals.
5. Discuss appropriate weight gain/loss/maintenance programs for active adults.
6. Discuss dietary approaches for the prevention of heart disease, cancer and osteoporosis.
7. List usable anthropometric methods appropriate for a given population.
8. Evaluate and indicate validity of nutrition information related to ergogenic aids and food products marketed to active individuals.
9. Develop an evidence based nutritional education video, specifically for an active individual.

Course Content:

Please see specific course topics listed in your tentative **Semester Schedule**.

Class Policies:

Your conduct is to be consistent with the Code of Student Conduct in the current MSU-B Student Handbook.

A student will fail the course if he or she participates in academic dishonesty, i.e. cheating, plagiarism, dishonesty, inappropriate use of electronic devices, or any violation of expectations listed in the MSU-B Student Handbook.

At this level of your education, you are expected to demonstrate professionalism in all behavior, i.e. respect for others, presentation & completion of projects, respect for diverse opinions, depth of inquiry, punctuality and participation in class discussions and activities.

Cell phones are expected to be turned off and out of sight during class.

Class Attendance:

Attendance to each class is expected. Any missed information is your responsibility.

Class Accommodations:**Students with Disabilities:**

MSU Billings is committed to providing equal access. If you anticipate barriers related to the format or requirements of this course, please meet with me so that we can discuss ways to ensure your full participation in the course. If you determine that disability-related accommodations are necessary, please contact Disability Support Services (657-2283; located in the Academic Support Center). We can then plan how best to coordinate your accommodations.

Course Evaluation: Grades will be assigned according to the following criteria

Grade	Percent	Points
A	93 – 100	418 - 450
A-	90 – 92	405 - 417
B+	87 – 89	391 - 404
B	83 – 86	373 - 390
B-	80 – 82	360 - 372
C+	77 – 79	346 - 359
C	73 – 76	328 - 345
C-	70 – 72	315 - 327
D+	67 – 69	301 - 314
D	63 – 66	283 - 300
D-	60 – 62	270 - 282
F	<60	<270

Evaluative Components:

Exam 1	100 points
Exam 2	100
Exam 3	100
Student Athlete project	100
<i>Animoto</i> Video project	50
Total	450 points

Record of Course Performance

Evaluative Components	Possible Points	Earned Points
Exam 1	100	_____
Exam 2	100	_____
Exam 3	100	_____
Student Athlete project	100	_____
<i>Animoto</i> Video project	50	_____
Total	450	_____ / _____ = _____ %



-Borrowed from <http://animoto.com/>



National Athletic Trainers' Association

The majority of lecture sessions are designed to present NATA competencies for attainment of the concepts, tenets or experience.

Prevention and Health Promotion (PHP)

General Nutrition Concepts

- PHP – 32** Describe the role of nutrition in enhancing performance, preventing injury or illness, and maintaining a healthy lifestyle.
- PHP – 33** Educate clients/patients on the importance of healthy eating, regular exercise, and general preventative strategies for improving or maintaining health and quality of life.
- PHP – 34** Describe contemporary nutritional intake recommendations and explain how these recommendations can be used in performing a basic dietary analysis and providing appropriate general dietary recommendations.
- PHP – 35** Describe the proper intake, sources of, and effects of micro- and macronutrients on performance, health, and disease.
- PHP – 36** Describe current guidelines for proper hydration and explain the consequences of improper fluid/electrolyte replacement.
- PHP – 37** Identify, analyze, and utilize the essential components of food labels to determine the content, quality, and appropriateness of food products.
- PHP – 38** Describe nutritional principles that apply to tissue growth and repair.
- PHP – 39** Describe changes in dietary requirements that occur as a result of changes in an individual's health, age, and activity level.
- PHP – 40** Explain the physiologic principles and time factors associated with the design and planning of pre-activity and recovery meals/snacks and hydration practices.
- PHP – 41** Identify the foods and fluids that are most appropriate for pre-activity, activity, and recovery meals/snacks.

Weight Management and Body Composition

- PHP – 42** Explain how changes in the type and intensity of physical activity influence the energy and nutritional demands placed on the client/patient.
- PHP – 43** Describe the principles and methods of body composition assessment to assess a client's/patient's health status and to monitor changes related to weight management, strength training, injury, disordered eating, menstrual status, and/or bone density status.
- PHP – 45** Describe contemporary weight management methods and strategies needed to support activities of daily life and physical activity.

Disordered Eating and Eating Disorders

- PHP – 46** Identify and describe the signs, symptoms, physiological, and psychological responses of clients/patients with disordered eating or eating disorders.
- PHP – 47** Describe the method of appropriate management and referral for clients/patients with disordered eating or eating disorders in a manner consistent with current practice guidelines.

Performance Enhancing and Recreational Supplements and Drugs

- PHP – 48** Explain the known usage patterns, general effects, and short- and long-term adverse effects for the commonly used dietary supplements, performance enhancing drugs, and recreational drugs.
- PHP – 49** Identify which therapeutic drugs, supplements, and performance-enhancing substances are banned by sport and/or workplace organizations in order to properly advise clients/patients about possible disqualification and other consequences.

Professional Development and Responsibility (PD)

- PD – 8** Differentiate among the preparation, scopes of practice, and roles and responsibilities of healthcare providers and other professionals with whom athletic trainers interact.
- PD – 10** Develop healthcare educational programming specific to the target audience (e.g., clients/patients, healthcare personnel, administrators, parents, general public).

Competencies that will be attained by **the class projects** include the following:

Student Athlete project:

- PHP – 33** Educate clients/patients on the importance of healthy eating, regular exercise, and general preventative strategies for improving or maintaining health and quality of life.
- PHP – 34** Describe contemporary nutritional intake recommendations and explain how these recommendations can be used in performing a basic dietary analysis and providing appropriate general dietary recommendations.
- PHP – 35** Describe the proper intake, sources of, and effects of micro- and macronutrients on performance, health, and disease.
- PHP – 36** Describe current guidelines for proper hydration and explain the consequences of improper fluid/electrolyte replacement.
- PHP – 41** Identify the foods and fluids that are most appropriate for pre-activity, activity, and recovery meals/snacks.

Animoto Video project:


- PHP – 33** Educate clients/patients on the importance of healthy eating, regular exercise, and general preventative strategies for improving or maintaining health and quality of life.
- PD – 10** Develop healthcare educational programming specific to the target audience (e.g., clients/patients, healthcare personnel, administrators, parents, general public).


Other competencies may be met as related to the topic chosen for the *Animoto* Video project, e.g. hydration, supplements, specific sport needs, etc.


NUTR 411 – Nutrition in Health and Human Performance
Tentative Semester Outline and Timeline for Assignments



Day	Lecture Topic	Related Reading Assignment	Notes
11.1.12 Lecture 1	Welcome Course Introduction Student Athlete project	Chapter 10 <i>Nutrition Consultation with Athletes</i>	Purchase text. Please submit Information form and Work Style survey by Friday.
13.1.12 Lecture 2	Nutrition Education Methods <i>Animoto</i> Video project	Chapter 10 <i>Nutrition Consultation with Athletes</i>	Sign up for a topic for the <i>Animoto</i> video project and start collecting images for use in the video.
16.1.12 Martin Luther King Human Rights Day	No Class	Celebrate Human Rights!	Participate in campus activities throughout the week.
18.1.12 Lecture 3	Dietary Guidelines for Athletes 1) Position: American Dietetic Association, Dietitians of Canada, and American College of Sports Medicine 2) Positions: International Society of Sport Nutrition 3) 2010 Dietary Guidelines for Americans 4) <i>MyPlate</i> replaces <i>MyPyramid</i>	Chapter 1 <i>Introduction to Sports Nutrition</i> Position Stand from ADA, DC, and ACSM.	Prior to class, go to http://www.acsm.org/ , look under <i>public policy</i> (left side), click on <i>position stands</i> . In the second paragraph, click to locate the site for all position stands. Review and locate <i>Nutrition and Athletic Performance</i> . Please print a PDF copy of this position stand and read prior to class. Prior to class, go to http://www.choosemyplate.gov/ to review changes to national nutritional program. <i>MyPyramid</i> has been replaced. List basic tenets of the <i>MyPlate</i> program and bring to class.

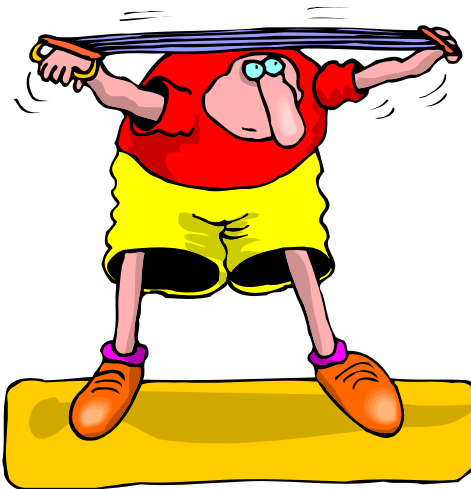
20.1.12 Lecture 4	Application of Dietary Recommendations to athletes and active individuals		
23.1.12 Lecture 5	Application of Dietary Recommendations to athletes and active individuals	Chapter 10 <i>Nutrition Consultation with Athletes</i>	Complete the Diet History and Food Record prior to coming to class. Bring completed form to class for exchange and discussion.
25.1.12 Lecture 6	Carbohydrate Food Forms/Sources Nutrient Content	Chapter 3 <i>Carbohydrates</i>	
27.1.12 Lecture 7	Carbohydrate Digestion & Absorption	Chapter 2 <i>Nutrients: Ingestion to Energy Metabolism</i>	
31.1.12 Lecture 8	Carbohydrate Metabolism		
1.12.12 Lecture 9	Carbohydrate Application		
3.2.12 Lecture 10	Fats & Lipids Food Forms/Sources Nutrient Content	Chapter 4 <i>Fats</i>	<i>Evidence based resource paper for Animoto Video project is due today.</i>
6.2.12 Lecture 11	Fats & Lipids Digestion, Absorption & Metabolism	Chapter 2 <i>Nutrients: Ingestion to Energy Metabolism</i>	
8.2.12 Lecture 12	Fats & Lipids Omega 3 Fatty Acids Performance and Health		

10.2.12 Lecture 13	Protein Food Forms/Sources Nutrient Content	Chapter 5 <i>Proteins</i>	
13.2.12 Lecture 14	Protein Digestion, Absorption, & Metabolism	Chapter 2 <i>Nutrients: Ingestion to Energy Metabolism</i>	
15.2.12 Lecture 15	Protein Application Protein Supplements		
17.2.12 Lecture 16	Application PFC Prescriptions		
20.2.12	President's Holiday	No Class	Celebrate History!
22.2.12	Exam 1	Chapters 1-5 & 10	
24.2.12 Lecture 17	Weight Management Energy Needs	Chapter 11 <i>Weight Management</i>	
27.2.12 Lecture 18	Weight Management Obesity Epidemic		Learning Objectives for the Animoto Video projects are due today by 5:00 p.m.
29.2.12 Lecture 19	Weight Management Disordered Eating	Chapter 11 <i>Weight Management</i>	

2.3.12 Lecture 20	Weight Management Disordered Eating	Chapter 11 <i>Weight Management</i>	
5 – 9.3.12	Spring Break		
12.3.12 Lecture 21	Anthropometry Body Measurement	Chapter 11 <i>Weight Management</i>	
14.3.12 Lecture 22	Ergogenic Aids Supplements	Types of Ergogenic Aids Chapter 9, <i>Nutritional Ergogenics</i>	Phase 1 of Student Athlete project is due today by 5:00 p.m.
16.3.12 Lecture 23	Ergogenic Aids Supplements	Regulations Chapter 9, <i>Nutritional Ergogenics</i>	
19.3.12 Lecture 24	Ergogenic Aids Supplements		Please submit your <i>Animoto</i> video <u>via email attachment</u> to your instructor by 5:00 p.m.
21.3.12 Lecture 25	Vitamins Food forms/Resources RDIs	Chapter 6 <i>Vitamins</i>	
23.3.12 Lecture 26	Vitamins Antioxidants & ROS Phytochemicals	Chapter 6 <i>Vitamins</i>	
26.3.12 Lecture 27	Vitamins Vitamin D Metabolism Health and Performance	On-Line D2L Readings	Papers for your <i>Animoto</i> Video project are due today by 5:00 p.m.

28.3.12 Lecture 28	Minerals Calcium Metabolism Health and Performance	Chapter 7 <i>Minerals</i>	
30.3.12 Lecture 29	Minerals Iron Digestion, Absorption & Metabolism Health and Performance	Chapter 7 <i>Minerals</i>	
2.4.12	Exam 2		
4.4.12 Lecture 30	Minerals Sodium Water Exercise and Gastrointestinal Discomfort	Chapter 7 <i>Minerals</i> Chapter 8 <i>Water</i> On-line D2L Readings	
6.4.12	Mini-Break Reflect and Energize!	To best prepare for problem based learning activities, read Chapters 8, 9, 12, 13 and 14.	
9.4.12	Problem Based Learning (PBL)	<i>Course Materials</i>	
11.4.12	PBL Case	<i>Chapters 8, 9, 12, 13 and 14</i>	

13.4.12	PBL Case	<i>Chapters 8, 9, 12, 13 and 14</i>	Phase 2 of the Student Athlete project is due at 5:00 p.m.
16.4.12	PBL Case	<i>Chapters 8, 9, 12, 13, and 14</i>	
18.4.12	PBL Case	<i>Chapters 8, 9, 12, 13, and 14</i>	
20.4.12	University Day	No Class	
10:00 – 11:50 23.4.12	Exam 3		



Nutrition in Health and Human Performance

Spring Semester, 2012

Teaching Methods

This course is taught using a variety of methods: lecture, discussion, application activities, case studies and Problem Based Learning (PBL). The variety of methods will allow different approaches to understanding this exciting area in sports medicine.

Exam Description

The exam questions are of various types:

1. multiple choice
2. fill in the blank
3. matching
4. true/false – If false, correct the statement.
5. calculations
6. short essay
7. case studies

Source of exam questions:

1. Lecture and case study discussion
2. Application activities
3. Learning issues from PBLs
4. Each chapter has review questions, plus application cases (*You are the Nutrition Coach*).
5. Research articles and evidence based material

General Guidelines

1. Class attendance is expected. Much information can be gained from interaction among your colleagues and activities presented during class time.
2. The general guideline for studying is to spend two hours studying for every one hour spent in class. Approximately six hours per week should be used outside of class to prepare for a 3-credit course and eight hours for the typical 4-credit course.
3. You are encouraged to ask questions during class. If something is unclear to you, it probably means that other students have a similar question.
4. Common courtesy dictates that you pay attention to the speaker and not talk to your neighbor or send/answer text messages during class time. Such talking and/or sending text messages annoy and distract fellow classmates and the professor. The obvious exception to this would be small group discussion or a paired activity. In that case, actively listen to your colleague in order to enhance the interaction and activity.
5. Smile and laugh a lot! Better health and fewer wrinkles are benefits.

