

FCS 262
NUTRITION
CREDIT HOURS: 3
FALL 2007

CLASS MEETS : TU/TH @ 11:00-12:20 in AB2 ROOM 301

INSTRUCTOR: Zaheer Ali Kirmani, Ph.D., R.D., L.D.
225 Academic II Phone: 936/ 294-1245
hec_zak@shsu.edu fax: 936/294-4204

OFFICE HOURS: Office hours have been posted in “COURSE INFORMATION” section of the BlackBoard.

TEXT: Whitney, EN, and Rolfes, SR: Understanding Nutrition, 11th ed.
Belmont, Thomson/Wadsworth, 2008.

COURSE OBJECTIVES: This course is designed to study the various fundamental concepts of nutrition. The various nutrients, their sources, metabolism, physiology, and interrelationships are examined. Requirements at various stages of growth and development are studied. Fundamentals of nutrient assessment to ascertain the quality of diets throughout the life cycle and in various communities are provided. Fundamentals of quality assurance in the process of providing various nutrients will be discussed. Experience is provided in making dietary studies utilizing computer software. Based on such studies, adjustment of meals for individuals and populations is suggested. Upon the completion of this course the student will be able to:

1. discuss foods as sources of various nutrients; their action, interaction, and balance in relation to health and disease;
2. relate the nutrient information to food and physiological functions of the human body;
3. demonstrate a varied and balanced diet from both a personal and professional viewpoint;
4. summarize nutritional information regarding chemical characteristics, metabolic roles, clinical symptoms of deficiencies, and food sources of each nutrient;
5. discuss nutrition problems as related to various socioeconomic groups in the U.S. and various cultures in the world;
6. delineate nutrition information with regard to various community nutrition delivery programs;
7. provide guidelines to effectively alter established, but undesirable, food habits, and
8. relate the responsibility of individuals in health professionals for keeping abreast with new developments in nutrition and food research.
9. demonstrate basic understanding of nutritional quality assessment of individuals and populations utilizing computer software.

10. foster a desire to share nutrition information with others

11. evaluate and discuss quality assurance procedures designed to systematically monitor the nutritional qualities of the diets in order to improve health of the populations and to resolve identified problems.

COURSE FORMAT: This course will consist of teacher lectures, student/teacher discussion, power point presentations, and student inquiry. One or more guest speaker may appear. Lectures will include textbook information as well as other references, some of which are listed in the bibliography. All lectures and other information will be posted on the Black Board.

OFFICE HOURS: Office hours have been posted in the course information section of black board. Additional meeting times by appointment.

STUDENT SYLLABUS GUIDELINES: You may find online a more detailed description of the following policies. These guidelines will also provide you with a link to the specific university policy or procedure: <http://ww.shsu.edu/syllabus/>

ACADEMIC DISHONESTY : Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. *See Student Syllabus Guidelines.*

CLASSROOM RULES OF CONDUCT: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students are to turn off cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination. Students may tape record lectures provided that they do not disturb other students in the process.

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS: Students are allowed to miss classes and other required activities, including examinations, for the observance of religious holy day, including travel for that purpose. Students remain responsible for all work. *See Student Syllabus Guidelines.*

STUDENTS WITH DISABILITIES POLICY: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should visit with the Office of Services for Students with Disabilities located in the Counseling Center. *See Student Syllabus Guidelines.*

VISITORS IN THE CLASSROOM: Only registered students may attend class. Exceptions can be made on case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

ATTENDANCE POLICY:

- Attendance is required as mandated by the University policy.
- There will not be any set number of points given to students having perfect attendance record but they will be given a higher grade for which they have come within 1% at the end of the semester.
- Perfect attendance record is missing 3 days in regular semesters and 1 day in summers.
- Genuine reasons of absence such as sickness, injury, or death in the family when supported by valid documentation will not be counted as an absence.
- No points will be deducted for the violation of the attendance policy but there will be no upward movement of the grades for the attendance policy violators.
- This policy will be strictly enforced and there will be no further discussion.

COURSE EVALUATION:

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|------------------|------------|------------------------|
| Major Tests (5)* | 500 points | 50% of the final grade |
| Assignments (4) | 400 points | 50% of the final grade |

*Six tests will be given; one test with the lowest grade will be dropped.

GRADING SCALE:

100 - 90 = A; 89 - 80 = B; 79 - 70 = C; 69 - 60 = D; and below 59 = F

COURSE OUTLINE:

An Overview of Nutrition

The Science of Nutrition
Food Choices
The Six Classes of Nutrients
Nutrition Research
Research versus Rumors
Recommended Dietary Allowances (RDA)
Setting and Using RDA
Diet and Health

Planning a Healthy Diet

Principles and Guidelines
Diet Planning Guides
From Guidelines to Groceries
Food Labels
Health Claims
Consumer Education

Overview of Anatomy and Physiology of the Digestive Tract and Circulatory System

Digestion, Absorption, and Transport of Nutrients

Nutrients and Their Functions

Carbohydrates

Fats and other lipids

Proteins and amino acids

Metabolism: Transformations and Interactions

Chemical reactions in the body

Breaking down nutrients for energy

The body's energy budget

Energy Balance and Body Composition

Energy in

Energy out

Components of energy expenditure

Estimating energy requirements

Body weight, body composition, and health

Weight Control: Overweight and Underweight

Causes of obesity

Controversies in obesity treatment

Good and bad choices in treatment of obesity

Problems of underweight

Weight gain strategies

The Vitamins

General information

Fat-soluble vitamins

Water-soluble vitamins

Water and Electrolytes

Water and body fluids

Major minerals

Trace minerals

Applied Nutrition

Fitness: physical activity, nutrients, and body adaptations

Pregnancy and lactation nutrition

Infancy, childhood, and adolescence nutrition

Adult nutrition

Geriatric nutrition

Diet and Health

Consumer concerns about foods and water
Hunger and global environmental problems
Principles of Nutritional Assessment
Nutritional assessment for nutrition care in community
programs

Fundamentals of quality assurance procedures in order to
ascertain the quality of nutrition care in various communities
Computerized assessment of nutritional quality of diets
throughout the life cycle and in various communities.

RECOMMENDED OR REQUIRED READINGS:

The following are suggested readings. The student should choose an additional reference for personal usage to enhance the class lectures.

Anderson, I., and Rossner, S.: The Gustaf study: Repeated, telephone-administered 24-hour dietary recall of obese and normal-weight men -- energy and macronutrient intake and distribution over the days of week. *J. Am. Diet. Assoc.* 96(7): 686, 1996.

Bekbolet, M.: Light effects on food. *J. Food Protection*, 53: 430, 1990.

Boyle, M. A., and Whitney, E. N.: Personal Nutrition, St. Paul: West Publishing Co., 2003.

Briggs, G. M., and Calloway, D. H.: Nutrition and Physical Fitness, 10th ed. Philadelphia: W. B. Saunders Co., 1985.

Burton, B. T.: Human Nutrition, 3rd ed. New York: McGraw-Hill, Inc., 1987.

Chen, M. F., Boyce, Jr. H. W., and Hsu, J. M.: Effect of ascorbic acid on plasma alcohol clearance. *J. Am. Coll. Nutr.* 9: 185, 1990.

Dougherty, R. H.: Future prospects for processed fruit and vegetable products. *Food Technol.* 44: 124, 1990.

Drewnowski, A. et al.: Diet quality and dietary diversity in France: Implications for the French paradox. *J. Am. Diet. Assoc.* 96(7): 663, 1996.

Hamilton, E. M. N., Whitney, E. N., andSizer, F. S.: Nutrition: Concepts and Controversies, 4th ed., St. Paul: West Publishing Co., 1988.

Hegarty, V.: Decisions In Nutrition, St. Louis: Times Mirror/Mosby, 1988.

Institute of Food Technologists: "Healthy" foods. An Institute of Food Technologists scientific perspective. *Food Technol.* 44: 40, 1990.

Joint Commission on Accreditation of Health Care Organizations. Accreditation Manual for Hospitals, 2006.

Kirmani, Z. A., et al.: Effects of n-3 and n-6 fatty acid rich oils on the cardiovascular system of thermally injured rabbits: Changes in plasma and platelet fatty acids. *J. Burn Care Rehabil.* 16: 173, 1995.

Kirmani, Z. A., et al.: Effects of n-3 and n-6 fatty acid rich oils on the cardiovascular system of thermally injured rabbits: Changes in plasma triglycerides, plasma cholesterol, relative blood viscosity, platelet count, and bleeding time. *J. Burn Care Rehabil.* 16: 306, 1995.

Kreulter, P. A.: Nutrition in Perspective, Englewood Cliffs: Prentice-Hall, Inc., 2000.

Lowik, M. R. H., Schrijver, J., van den Berg, H., Hulshof, K. F. A. M., Wedel, M., and Ockhuizen, T.: Effect of dietary fiber on the vitamin B6 status among vegetarian and nonvegetarian elderly (Dutch Nutrition Surveillance System). *J. Am. Coll. Nutr.* 9: 241, 2002.

Mitchell, H. S., Rynbergen, H. J., Anderson, L., and Dibble, M. V.: Nutrition in Health and Disease, 16th ed. Philadelphia: J. B. Lipponcott Co., 1976.

Shahar, E., et al.: Dietary n-3 polyunsaturated fatty acids and smoking-related chronic obstructive pulmonary disease. *N. Engl. J. Med.* 331: 228, 2003.

Schuette, L. K., et al.: Quantitative use of the Food Guide Pyramid to evaluate dietary intake of college students. *J. Am. Diet. Assoc.* 96(5): 453, 2003.

Spallholz, J. E.: Nutrition: Chemistry and Biology, Englewood Cliff: Prentice Hall, 1989.

Wardlaw, G. M., and Insel, P. M.: Perspectives in Nutrition, St. Louis: Times Mirror/Mosby, 1990.

Wardlaw, G. M.: Contemporary Nutrition, Boston: WCB/McGraw-Hill, 2003.

Williams, S. R.: Nutrition and Diet Therapy, 5th ed. St. Louis: Times Mirror/Mosby, 1985.

LIST OF IMPORTANT JOURNALS:

The American Journal of Clinical Nutrition
The Journal of Nutrition
The Journal of American Dietetic Association
Journal of Canadian Dietetic Association
American Health: Fitness of Body and Mind
Australian Journal of Nutrition and Dietetics

Cereal Foods World
Journal of American College of Nutrition
Journal of Food Science
Food Technology
The Journal of American Medical Association
The Lancet
Topics in Clinical Nutrition
Food and Nutrition
Nutrition in Clinical Practice
Journal of Parenteral and Enteral Nutrition
Nutrition Reviews
The FASEB Journal
American Family Physician
American Journal of Public Health
Journal of The Canadian Dietetic Association
The New England Journal of Medicine
The Journal of Pediatrics