

Department: NUSC

Course No.: 165

Credits: 3

Title: Fundamentals of Nutrition

Contact Person: Hedley Freake

Content Area: CA 3 Science and Technology

Catalog Copy: 165. Fundamentals of Nutrition. Either semester. Three credits. An introduction to the principles and concepts of nutrition with emphasis on the nature and function of carbohydrates, fats, proteins, minerals and vitamins, and their application to the human organism.

Course Information: This course aims to help students to:

- Begin to appreciate the complexities of the science of nutrition.
- Understand the function of nutrients inside the human body.
- Develop a framework for assessing the validity of nutritional information.
- Record food intake and use a computer to determine its nutrient composition.
- Apply the knowledge gained to themselves and their communities.

The midterm exams will cover the material in the preceding sections of the course, and the final will include all material. Exams will include both multiple choice and short answer questions. In addition, there will be homework assignments. These will include recording food intake for three days and assessing its nutrient content using a computer program. This analysis will form the basis for a written report, comparing these data to published recommendations.

The grade for the course will be made up as follows: Final exam 35%, homework projects 25%, the best 2 out of 3 midterm exams, 20% each.

Course Outline

1. Introduction.

What is nutrition?

The scientific approach

Basic biochemistry

Dietary recommendations

2. Overview of digestion and absorption

3. Macronutrients

a). Carbohydrates

b). Lipids

c). Proteins

- d). Overview of macronutrient metabolism
- e). Energy balance and weight control

4. Micronutrients

- a). Water soluble vitamins
- b). Fat soluble vitamins
- c). Major minerals and water
- d). Trace minerals

5. Topics in Applied Nutrition

- a). Nutrition through the life cycle
- b). Consumer concerns around food
- c). Nutrition and exercise

Meets Goals of Gen Ed: Acquire critical judgment: many theories and approaches in the area of nutrition are available to students through media outlets. Students will be taught to look for the basis and origin of particular ideas and develop a framework in order to evaluate them.

Acquire awareness of their era and society: nutrients are introduced with an historical perspective. The evolution of ideas within this applied science is dependent on more basic disciplines. Current nutritional problems, e.g. obesity, hunger happen in a societal context, which must be considered in understanding causes.

Acquire consciousness of the diversity of human culture and experience: nutritional problems related to each nutrient are dependent on cultural, social and political considerations in different parts of the world. Consideration of these problems leads to an appreciation of the broad range of situations and viewpoints that impact on nutrition.

Acquire a working understanding of the processes by which they can continue to acquire and use knowledge: a key feature of this course is that it is immediately applicable to the students' own world. They learn to examine and evaluate their own diets and individual food products. They gain tools that enable them to think about food and its impact on their health. They also gain the ability to evaluate nutritional claims. These skills have lifelong applicability.

CA3 Criteria:

1. Explore an area of science and technology... This course introduces the broad area of nutrition. It concentrates on the nutrients, their distribution in foods, absorption, metabolism, function and effects of deficiency and excess.

2. Promote an understanding of the nature of modern scientific inquiry... The discovery of each nutrient usually comprises a useful illustration of the scientific method. In addition, the evaluation of current nutritional claims leads to questions about the basis for those claims, whether they are anecdotal or result from application of the scientific method.

3. Introduce students to unresolved questions.... Nutrition is replete with these. Many major health problems in the US e.g. obesity, heart disease, cancer are influenced by nutrition, yet the underlying mechanisms and the appropriate dietary advice to give are not always apparent.

4. Promote interest, competence and commitment to continued learning.... Nutrition is a science that has an immediate and easily appreciated impact on both societies and individuals. Students learn about those connections and are able to use the information and skills from this course as they think about their own diet in the future, as well the role of diet in the health of populations.

Role of Grad Students: Some help with grading. Work very closely with faculty teaching the course.