Cedar Crest College
THE NUTRITION PROGRAM
Fall 2000

COURSE PLAN

COURSE NO: NTR 310

COURSE TITLE: Advanced Nutrition

COURSE DESCRIPTION: An intensive study of functions, interrelationships and cellular metabolism of nutrients, determination of nutrient requirements and assessment of nutritional status. Topics of current research interest are included.

CREDITS: 3

CLOCK HOURS/WEEK 3 hours total, 3 hours didactic

PREREQUISITES: NTR 210 - Principles of Human Nutrition, CHE 217 - Nutritional Biochemistry, BIO 117/118 or 217/218 - Human Anatomy & Physiology I, II

COURSE OBJECTIVES:

1. The student will have a basic knowledge of:

A. Exercise physiology (B.1.1).

- Define exercise physiology terms.
- Explain how nutrition impacts exercise and muscular status.

A. Evolving methods of assessing health status (F.1.2).

- Discuss newer methods of assessing health status.

1. The student will have a working knowledge of:

A. Public speaking (A.2.6).

- Gain experience in public speaking.

A. Nutrient metabolism (B.2.5).

- Explain how vitamins and minerals are metabolized in the body.

A. Fluid and electrolyte requirements (B.2.7).

- Discuss how the body maintains electrolyte and acid-base balance despite alterations in food/fluid intake.

A. Pharmacology: Nutrient-nutrient and drug-nutrient interaction (B.2.8).
B. Influence of age, growth, and normal development on nutrition requirements (F.2.1).

- Identify how nutrient requirements for macronutrients and micronutrients change during the lifespan.

A. Nutrition and metabolism (F.2.2).

- Describe (review) the major metabolic pathways for macronutrients.
- Discuss the absorption, transport, storage, and metabolism of micronutrients.

1. The student will demonstrate the ability to present an educational session for a group (A.3.1).

A. Use current information technologies (A.3.5).
B. Interpret laboratory parameters relating to nutrition (B.3.2).
C. Interpret current research (D.3.1).
D. Calculate and interpret nutrient composition of foods (E.3.1).
E. Collect pertinent information for comprehensive nutrition assessments (F.3.3).
F. Determine nutrient requirements across the lifespan (F.3.4).
G. Measure, calculate, and interpret body composition data (F.3.5).

REQUIRED TEXT:

Advanced Nutrition and Human Metabolism (3rd ed.) by James L. Groff and Sareen S. Gropper. Wadsworth Publishing, 2000.

Nutrients in Food by Elizabeth Hands, Lippencott, 2000.

EVALUATION:

Assessment of the student's progress is an ongoing process and involves the student as well as the instructor. The stated course objectives serve as the basis for evaluation. All assignments are due on the date scheduled. NO EXCEPTIONS.

Two examinations at 100 points each	200 points
Comprehensive final at 200 points	200 points
Four projects at 75 points	300 points
Class participation	50 points
Six assignments at 25 points each	150 points
TOTAL	900 points

If you are late more than two times, or absent more than twice without a doctor's note, your final numerical grade (on a scale of 1 to 100) will be lowered by 3 points.

TEACHING METHODS:

1. Lecture/teacher-centered discussion
2. Student-centered discussion
3. Concept mapping
4. Student presentations
5. Reading in textbooks, reference books, periodicals, newspapers, journals, Internet
6. Assignments involving researching, organizing information, and writing

WORK EXPECTED OF THE STUDENT:

1. Students are expected to have read the assignment prior to class and to actively participate in class discussions.
2. Students are responsible for all terms defined in the textbook.
3. Written assignments must be word processed and completed on 8-1/2" x 11" paper. Spelling, punctuation and grammar will constitute part of the grade for the assignment. One-inch margins and double-spacing is required. Indent for paragraphs.
4. Class attendance is expected. If you must miss a class, a phone call is expected.
5. Assignments are due on the date indicated. NO EXCEPTIONS.
6. If you must miss a test, you must call in before the test. Make-ups are given at the instructor's convenience.
7. Students must complete 4 written assignments and write 2 journal article abstracts.

CLASSROOM PROTOCOL

Appropriate classroom behavior is implicit in the Cedar Crest honor Code. Such behavior is defined and guided by complete protection for the rights of all students and faculty to a courteous, respectful classroom environment. That environment is free from distractions such as late arrivals, early departures, inappropriate conversations and any other behaviors that might disrupt instruction and/or compromise students' access to their Cedar Crest College education.

Honor Code:

The Cedar Crest Honor Code will prevail at all times. Please verify on each test and assignment that the work done is your own with your SIGNATURE. You are not to consult with ANY OTHER STUDENTS when you are given take-home tests, projects, and assignments. PLAGIARISM or any other form of academic dishonesty will result in no points on the paper/exam on which you plagiarized or cheated. In addition, such an act may result in failing the entire course. Please refer to your customs book for a complete explanation of the Cedar Crest Honor Code.

PROJECTS 1 & 2

OBJECTIVES

- **Identify important food sources of nutrients.**
- **Interpret nutrient composition of foods.**
- **Explain how vitamins and minerals are metabolized in the body.**
- **Identify how nutrient requirements for micronutrients change during the lifespan.**
- **Explain the effect on the body of too much or too little of any micronutrient.**
- **State stability issues for each micronutrient.**
- **Identify nutrient-nutrient interactions and basic drug-nutrient interactions.**
- **Present an educational session for a group.**
- **Gain experience in public speaking.**

PROCEDURE

Each student will be responsible to diagram concept maps for 2 nutrients. The instructor will assign these nutrients. Students will present their concept map and report on the nutrients during class. All students are responsible to include the following in the report and on the concept map:

1. **Important food sources**
2. **Absorption**
3. **Transport**
4. **Metabolic functions**
5. **Excretion**
6. **Deficiency**
7. **Toxicity**
8. **DRIs**
9. **Stability issues**
10. **Any medication concerns**
11. **Lifespan concerns**

A copy of your concept map must be distributed to all classmates during your presentation. A written (typed only accepted) report is to be submitted at the time of the presentation. Be sure to include your references, which must include current professional peer-reviewed journals.

Limit your presentation to 25 minutes with 5 minutes for questions. If your presentation is less than 20 minutes, points will be removed.

EVALUATION

Your concept map and report will be graded on neatness, clarity and completeness of information.

Your presentation will be graded on vocal aspects of delivery (your use of volume, rate, emphasis, pausing, and articulation) and nonverbal aspects of delivery (posture, eye contact, gestures, personal appearance) as well as use of visual aids. Your classmates will evaluate your presentation which will be included as part of your grade for these projects.

PROJECT 3

OBJECTIVE

- **State the pros and cons of supplement use.**

PROCEDURE

Choose one of the following nutrients (Iron, Zinc, Calcium, Protein, Vitamins A or C) and compare the costs of obtaining a given nutrient's requirement from food sources vs. supplements. In your paper include a response for the practicality of taking a supplement vs. a food and pro and con of both.

EVALUATION

Project #3 will be evaluated on completeness of information and thoroughness of research/documentation.

PROJECT 4

OBJECTIVE

- **Explain how the chemical structure of each vitamin is related to its stability and/or biologic activity.**

PROCEDURE

For each vitamin, identify the key feature(s) of its chemical structure. How is/are this/these feature(s) related to the stability and/or biologic activity of the vitamin?

EVALUATION

Project #4 will be graded on completeness/thoroughness of information required as outlined in procedure

ABSTRACTS (Part of "assignments" - 25 points)

OBJECTIVES

- **Summarize in your own words each part of a scientific study.**
- **Interpret current research.**

PROCEDURE

Each student must write two journal article abstracts. The journal article must be published within the past 18 months and be a current topic in nutrition science, experimental or clinical nutrition research or nutrition in medicine.

The abstract must be approximately 100 words and will summarize the major findings or ideas presented. Each abstract should be typed as single-sided, double spaced, left-justified with 1" margins. The author(s) title and journal name and date must be on the abstract. A copy of the article must be submitted with the abstracts.

EVALUATION

Your abstract will be graded on its clarity, accuracy, conciseness, and your grammar/spelling.

STYLE GUIDE FOR NUTRITION ASSIGNMENTS

Effective: August 2000

1. **Type on 8-1/2" x 11" white paper. Type on one side of paper.**
2. **Use Times New Roman font (or similar, if not available) in size 12.**
3. **Type a Title Page. Center the title slightly above mid-page. Do not capitalize it in full or underline it. Capitalize only first letters of principal words, including the first and last and any word after a colon, but otherwise not conjunctions, articles, or prepositions. Double space, and center your name. Double space again and center the name of the course and semester/year (Foundations of Dietetics, Fall 2000).**
4. **Margins on all sides should be 1-inch to 1-1/4-inch.**
5. **Double-space text and indent first sentence of each paragraph.**
6. **Use an unjustified right margin (on Word, this means "align left").**
7. **If your paper contains more than one section, use headings to separate out the sections. The main heading should be centered with the first letters of principal words capitalized. The second level of heading (also called a B head) should be flush left, first letters capitalized, and the heading underlined. If a third level of heading (C head) is needed, use the same style as the second level and simply indent it. For example:**

Case Study (Main or "A" Heading)

Background of Case Study (Sub or "B" Head)

Assessment

Anthropometric ("C" Head)

8. **All numbers from one to nine are spelled out. Any number from 10 up can be written as a figure.**

9. **Most abbreviations are not allowed, except for mg., RE, or similar terms. If you are writing about the American Dietetic Association, for example, you must spell it out the first time and put the abbreviation after it in parentheses (ADA). Then you can refer to ADA instead of spelling it out.**

10. **Plagiarism is the use of another's words or ideas as if they are your own. If just one sentence is copied from a source without it being in quotation marks, it is plagiarism. If you hand in a paper that is plagiarized, you will receive no points on that paper. You may also fail the course, be suspended from the college, or even be expelled.**

11. **Whether you are quoting from a book or mentioning someone else's ideas, you must give credit to the source in parentheses after the quote or statement (usually at the end of the sentence). If you are quoting a source, put the author, year, and page number in parentheses after the quote. If you are stating someone else's ideas, put the author and year in parentheses. Here are examples.**

Quotation: The author feels that "the final, but very important, component of any nutrition education program is evaluation" (Smith, 1999, p. 193).

Citing a source with two authors: For example, a nutrition education-through-gardening program was undertaken at three different locations in the United States (Hackman & Wagner, 1990).

Citing a source with four authors: Older adults in rural areas reported in a survey that nutrition education should include the benefits of healthful eating behaviors (Fischer, Crockett, Heller, & Skauge, 1991).

Citing a source with six or more authors: Older adults often lose the ability to discriminate between sounds as they get older (Weinstein et al., 1998).

Citing two or more sources: The following can be done to manage these concerns (Carter, McKenna, Martin & Andresen, 1989; Pocinki, 1991; Ralph, 1982; Weinrich et al., 1989).

NOTICE: When you cite a source, do NOT use first names or initials. Also, use "&" instead of "and." When citing two or more sources, use semicolons to separate each citation, and arrange the citations in alphabetical order.

12. **All references must be listed on a separate sheet(s) put behind your paper. Type "References" centered on the first line and proceed as follows.**

For books:

Administration on Aging. (1983). An evaluation of the nutrition services for the elderly. Washington D.C.: United States Department of Health and Human Services.

Doak, C. C., Doak, L. G., & Root, J. H. (1996). Teaching patients with low literacy skills. (2nd ed.). Philadelphia: J.

B. Lippincott Company.

For journal articles:

Betts, N. M. (1985). A method to measure perceptions of food among the elderly. Journal of Nutrition for the Elderly, 4(4), 15-19.

Gibbs, R. D., Gibbs, P. H., & Henrich, J. (1987). Patient understanding of commonly used medical vocabulary. The Journal of Family Practice, 25(2), 176-178.

For information from web site (be very critical of what information you take from the web):

Betts, N. M., & Gibbs, R.D. (2000). Nutrients in Soy Foods [On-line: Soy Foods Web Site) Available: www.soyfoods.com.

13. Any **tables or figures** must be given a number (Table 1, Table 2, etc.) and placed behind the text and in front of the Reference section. Tables and figures must be mentioned in the text.

14. Always **proofread** your paper for spelling, punctuation, subject-verb agreement, and accuracy of quotations and references. Part of your grade is based on these.

15. When you hand in your paper, please **paperclip** it together. No staples and no covers please!

16. This style guide is based in most parts on The Publication Manual of the American Psychological Association (4th edition), 1994. If you have any further questions, consult this book (one is available in the secretary's office) or ask your instructor.

DATE	TOPIC	READING ASSIGNMENT
Aug 28	Introduction to course	Handouts
	Concept mapping	Ch 4
	Carbohydrates	Hands pp. 23-25
Sept 4	NO CLASS - LABOR DAY	

Sept 11	Carbohydrates continued	Ch 4, 5
	Fiber	Hands pp.23-25
Sept 18	Proteins	Ch 7
		Hands pp. 21-23
Sept 25	Lipids	Ch 6
		Hands pp. 25-27
Oct 2	TEST	Ch 4, Hands pp.21-27
	Fluids and Acid/Base Balance	Ch 14, Hands p.21
Oct 9	NO CLASS – FALL BREAK	
Oct 16	Body Composition and Energy Expenditure	Ch 15
	Body Composition Exercise	
Oct 23	Integration & Regulation of Metabolism	Ch 8
Oct 30	Vitamins A, D, E, K	Ch 10
		Hands pp.29-32,45-50
Nov 6	Vitamin C, Thiamin, Riboflavin, Niacin	Ch 9
	ABSTRACTS DUE	Hands pp.38-43,50-51

Nov 13	B_6, Pantothenic Acid	Ch 9
	Folic Acid, B_{12}, Biotin, Choline	
Nov 20	TEST	Ch 14, 15, 8, 10, 9
	Calcium, Phosphorus	Hands p.21,29-32,38-43,45-50
		Ch 11, Hands p.53-55,67-69
Nov 27	**Magnesium, Iron**	Ch 11, 12
	Zinc, Copper, Iodine	Hands pp. 56-57,59-63,73-75
Dec 4	Sodium, Potassium, Chloride	Ch 11
	PROJECT 3 DUE	Hands pp. 54-56,68,71-73
Dec 12	Phytochemicals	Handouts
	PROJECT 4 DUE	
	FINAL TO BE ANNOUNCED	Comprehensive