

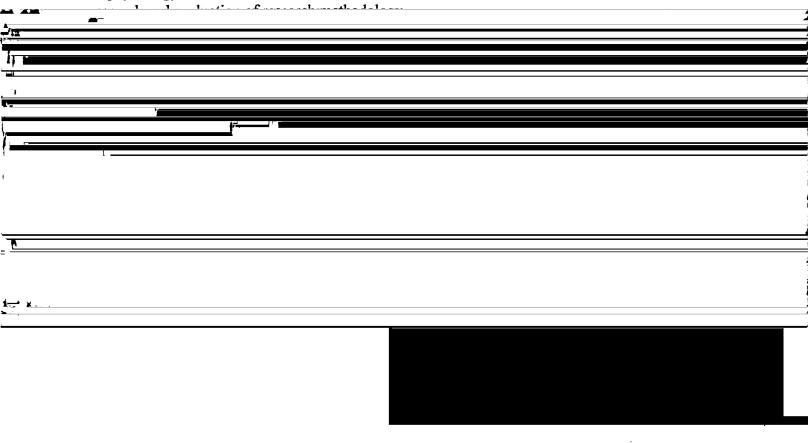
FN 458/558

Advanced Human Nutrition

(4c-0l-4sh)

Prerequisites: FN 355, CH 255 or CH 351, MA 217

In-depth study of the nutrients and their function within the cell. Incorporation of the principles of physiology and biochemistry in the study of nutrition. Emphasis placed on applying current



## I. Catalog Description

FN 458/558

Advanced Human Nutrition

4 credits 4 lecture hours 0 lab hours (4c-0l-4sh)

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#### III. Course Outline

(56 hours - 4, one hour exams = 52 hours of class time in one semester)

- A. Introduction/Nutrition Research Methodologies (5 hours)
  - 1. Descriptive Studies
  - 2. Analytical Surveys
  - 3. Experimental Method
  - 4. Use of Statistics in Interpreting Research (mean mode t-test analysis of variance)
  - 5. Reading Scientific Tables in Nutrition Research
- B. The Recommended Dietary Allowances (2 hours)
  - 1. History and Purpose
  - 2. Scientific Basis for Recommendations
  - 3. Revisions of Recommendations
- C. The Gastrointestinal Tract (5 hours)
  - 1. Review of Anatomy and Physiology
  - 2. Specialized Cells of the Gastric and Intestinal Epithelium
  - 3. Enzymes of Digestion
  - 4. Digestion of Carbohydrate, Protein, Lipid, and Fiber
  - 5. Application to Gastrointestinal Diseases (e.g. Dysphagia, Gall Bladder, Constipation, Diverticulosis)
- D. The Fat Soluble Vitamins: Absorption/Function/Assessment of Nutritional Status/Application of Current Research (6 hours)
  - 1. Vitamin A
  - 2. Vitamin D
  - 3. Vitamin E
  - 4. Vitamin K
  - 5. Applications (e.g. β-carotene as an antioxidant, Vitamin D and latitude, Vitamin E and low density lipoprotein oxidation)
- E. The Water Soluble Vitamins: Absorption/Function/Assessment of Nutritional Status/Application of Current Research (9 hours)
  - 1. Thiamin

5 Vitamin B<sub>6</sub> 4. 6. Vitamin B<sub>12</sub> 7. **L**.otin 8. Vitamin C Applications (e.g. B vitamin needs of athletes, Homocysteinemia and heart 9. disease, Vitamin B<sub>12</sub> and senility) The Manuscrater Absorption/Eunstian/Accessment of Mutritional Status/Application of Current Research (4 hours) Calcium 3. Magnesium The Electrolytes: Sodium, Potassium, and Chloride 4. Applications (e.g. measures of bone mass, magnesium needs of women, 5. fluid balance and athletic performance)

The Microminerals: Absorption/Function/Assessment of Nutritional

Status/Annlication of Current Research (6 hours)

1. Iron

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- 2. Zinc
- 3. Copper
- Chromium 4.
- Iodine

- 6 1. Review of Triglyceride Metabolism 2. Ketone Formation and Relationship to Carbohydrate Intake 4. Hormonal Control of Triglyceride Metabolism Lipoprotein and Apolipoprotein Metabolism 5. Eicosanoids and Heart Disease 6. The Relationship of Individual Fatty Acids to Cardiovascular Disease Risk 7. 8. The Effect of Selected Drugs on Cholesterol Metabolism K. Protein Metabolism (4 hours) Amino Acid Catabolism for Energy Yield The state of the s
  - 4. Neurotransmitter Synthesis: Serotonin, Dopamine, Norepinephrine, Epinephrine

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The Urea Cycle

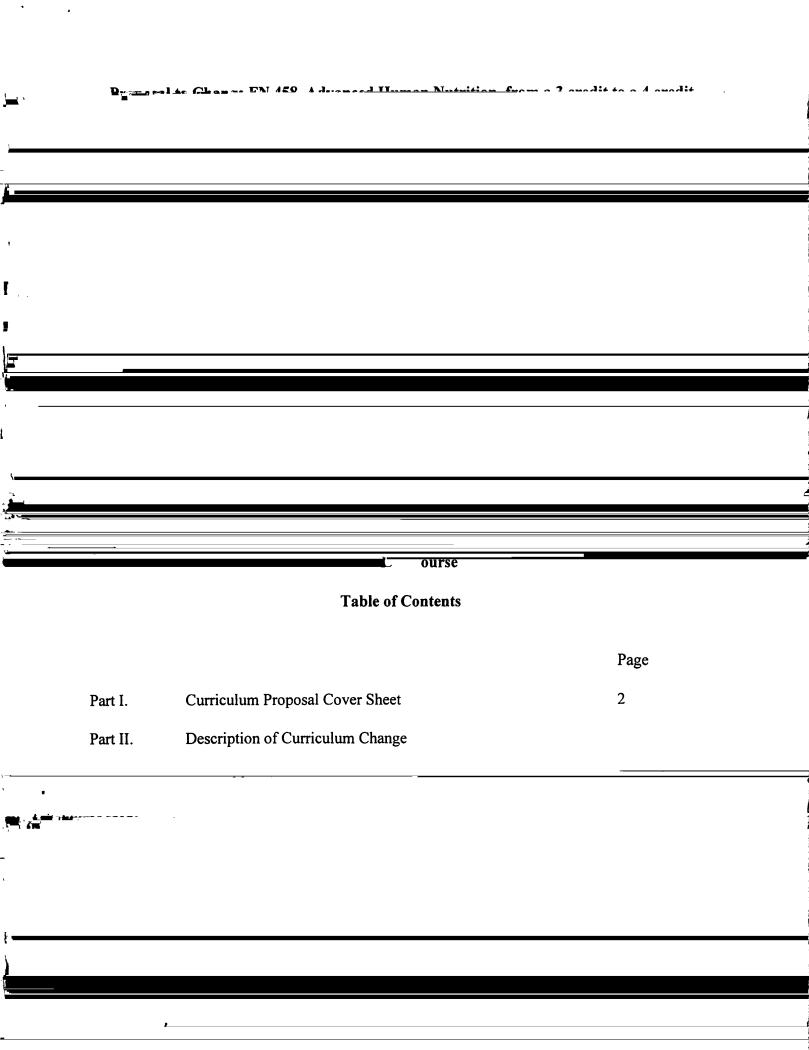
5. Application (e.g. glutamine as a gut fuel, carbohydrate intake on serotonin synthesis)

interpret food and health-related scientific studies. Washi	migion, r	JC.
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	2.	Mortensen L. & Charles, P. (1996) Bioavailability of calcium supplements and the effect
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		vitamin D. American Journal of Clinical Nutrition, 63, 354-357.
	3.	Yates, A. A., Schlicker, S. A. & Suitor, C.W. (1998) Dietary reference intakes: the new basis for recommendations for calcium and related nutrients, B vitamins, and choline. <u>Journal of the American Dietetic Association</u> , 98, 699-706.
	4.	Institute of Medicine, Food and Nutrition Board. (1998) <u>Dietary reference intakes for thiamin, riboflavin, niacin, vitamin B-6, folate, vitamin B-12, pantothenic acid, biotin, and choline.</u> Washington DC: National Academy Press.
	5.	McBean, L.D. (1998, July/August). Special dietary needs of mature Americans. <u>Dairy</u> Council Digest, 69, 19-24.

Addis, P. B. (1990, March/April). Coronary heart disease: an update with emphasis on

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# **Summary of Proposed Revisions**

	accompanying increase in the amount of information to be discussed. This revision also adds MA 217, Probability and Statistics, and FN 355, Nutrition in Disease I as prerequisites.
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FN 458/558

Advanced Human Nutrition

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#### I. Catalog Description

Study in depth of the nutrients and their functions within the cell. Incorporation of the principles of physiology and biochemistry in the study of nutrition. Emphasis on current research and evaluation of research methodology. (3 hours lecture) Prerequisite: CH 351 or 355 or concurrently, FN 212

#### II. Competencies

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cells.

C. explain the role of each essential nutrient in cellular metabolism.

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IV. Evaluation 10

- A. Midterm exam
- B. Term project
- V. Text

Goodhart and Shils. Modern Nutrition in Health and Disease, 6th edition.

VI. Supplementary Materials

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		VII.	Spe	ecial Provisions
			A.	Term project will be the development of a research design based on a review of current literature.
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## Part III. Student Statements of Support

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### A. Four credit course

12 extra hour of class would be beneficial in allowing you to cover more information."

summary, once each semester, and presenting it to the class. These summaries may take 10 or 15 minutes, depending on an additional review/explanation of topics that were not well understood. Students state that they like this addition of "5 minute summaries".

Fall, 1996

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B. No n=1; 7%	
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To:

Mary Swinker

Chair, College Undergraduate Curriculum Committee

From:

Rita Johnson

Department of Food and Nutrition

Subject:

Revision of Course Proposal

Mary, please find attached the course proposal to increase the number of credits for Advanced

made some minor recommendations last spring, which I have made. These changes include:



Subject: Adding MA 217 as a prerequisite to FN 458

**Date:** Wed, 16 Feb 2000 22:49:26 -0500

From: Joanne Steiner <jsteiner@grove.iup.edu>
Organization: Chair, Food and Nutrition To: JBuriok@grove.iup.edu

CC: Joanne Steiner <jsteiner@grove.iup.edu>

I have just come across another course that is the same as my previous memo. We would like to add MA 217 as a prerequisite to FN 458 Advanced Human Nutrition. Emphasis in this course is placed on applying current research and evaluation of research methodology.

Another email reply would be appreciated.

Joanne B. Steiner Chair, Food and Nutrition

Subject: Adding MA217 as a prerequisite Date: Thu, 17 Feb 2000 13:17:29 -0500 From: Jerry Buriok <jburiok@grove.iup.edu>
To: jsteiner@grove.iup.edu
CC: Jerry Buriok <jburiok@grove.iup.edu>

Dr Steiner.

Di. Stellet,
In response to your memos stating you wish to add MA217 Probability and Statistics to the prerequisites for FN362  Experimental Ecods and EN458 Advanced Human Nutrition. Lwant to inform you the Mathematics Department is totally
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