

Syllabus

Summer 2010

CP4330-Nutrition I

Meeting times and places

Monday 10 a.m. in room R-200
Wednesday 8 a.m. in room R-200
Friday 9 a.m. in room R-100

Contact Information:

Course Professor: Dr. Jesse T. Coats, RPh., D.C., D.A.A.P.M., C.C.S.P.,
Associate Clinical Professor & Department Head Clinical Diagnosis

Office: Room #317, Faculty/Research Building

Office Hours:

Monday 11 a.m.
Tuesday 10 a.m.
Wednesday 9 a.m. and 11 a.m.
Thursday 9 a.m.

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Course Materials:

Required Readings/Texts:

CONTEMPORARY NUTRITION, A Functional Approach 1st Edition
Gordon M. Wardlaw and Anne M. Smith, McGraw-Hill Higher Education Co., 2009.

Suggested Readings:

The American Journal of Clinical Nutrition
Journal of Nutrition
Nutrition Reviews

Scholar 360 Address:

Course Description:

In a modern, average chiropractic practice, it is imperative that a prudent doctor of chiropractic have a comprehensive knowledge of nutrition. This course will give the student doctor a depth and breadth of nutritionally related biochemistry and gastrointestinal physiology. We will use both lecture as well as case studies to acquire

the core concepts of the course. This course is definitely a keeper. Do not sell your book back. Start building you a reference library for your practice.

Learning Outcomes: At the conclusion of this course a student should.....

1. Have a good working knowledge of human biochemistry and human physiology with an emphasis on gastrointestinal physiology.
2. Be well versed on the processes of human digestion, absorption, metabolism and distribution of the various nutrients both from exogenous as well as endogenous sources.
3. Be proficient in the use of nutritional and dietetic tools, such as ADA exchange lists, vocabulary, abbreviations, and other helpful aids used in the practice of nutritional counseling.
4. Be able to evaluate meals with respect to biologic value, caloric value, protein, carbohydrate, fat, vitamin and mineral content.
5. Recognize the impact of pathophysiologic processes on the human nutritional status as well as the role of maintaining the human nutritional status as we seek remedy of these pathophysiologic processes through nutritional therapy.
6. Begin to amass the clinical knowledge needed to nutritionally support several well known disease processes that will be discussed in Nutrition II.

Clinical Competencies:

Clinical competencies set forth by CCE (Council on Chiropractic Education) and the faculty of Texas Chiropractic College to be addressed in this course:

1. Professional issues, ethics and morals regarding patient management
2. History Taking
3. Physical Examination
4. Neuromusculoskeletal Examination
5. Case Management
6. Case follow-up and review
7. Wellness
8. Emergency care
9. Nutritional Counseling
10. Record Keeping
11. The Doctor-Patient Relationship

Teaching Philosophy:

The approach used in this class is to begin with a review of the basic sciences covered in the course, then build into the clinical application of the new clinical material covered.

The student doctor should benefit from this approach 3 fold:

1. Identify and solidifying attained background knowledge in basic science,
2. Correlating this basic science knowledge through application of such to solve novel clinical problems presented in upper level clinical courses,

3. And finally fortifying board preparation through this comprehensive review of basic science and clinical corollaries.

Teaching Methods

Teaching methods used in this course will vary according to tempo and personality of the class. Lecture, principally via Socratic Method, and assigned readings outside of class will be used.

At this advanced level in your education I consider you and I as equal partners with equal responsibility to each other, that is to say I bring the information to class in an organized manner and you put forth the necessary effort to take notes and learn the material. At various points I will check your progress and offer any service I can to identify and rectify any major deficiency that might be identified.

Student Responsibilities:

Last day to drop and/or add.....May 21st 2010

Last day to withdraw.....July 2nd 2010

Participation:

Student doctors should be participators rather than spectators. Ask questions in class and when the occasion arises dissertate. This is good early training for the field, for field doctors are asked to speak frequently often times in public.

Homework:

A standing request to commit to memory the lesson given that day as well as past lectures is in order.

Daily Responsibilities:

Attend class, participate in class and stay current with concepts as they are presented.

Projects:

No projects are assigned to date. I will talk to you about a voluntary project during the trimester that will serve as extra credit for those interested.

Quizzes/Exams: Hourly exams will be given at regular intervals and paced somewhat to the tempo of the class at large.

Holidays/Other Non-meeting Dates:

Classes will not meet:

May 31st Memorial Day

July 5th Independence Day

July 15-17 Homecoming

Final Exam Week..... August 10th – 18th

Course Content and Outline:

TENTATIVE OUTLINE OF COURSE:

NOTE: Exam questions will be taken from the learning objectives listed at the beginning of each chapter.

Week 1 Chapter 1

What You Eat and Why

7 Learning Objectives

- Identify diet and lifestyle factors that contribute to the 10 leading causes of death in North America.
- Define the terms nutrition, carbohydrate, protein, lipid (fat), alcohol, vitamin, mineral, water, kilocalorie (kcal), and fiber.
- Determine the total calories (kcal) of a food or diet using the weight and calorie content of the energy-yielding nutrients.
- Use the basic units of the metric system to calculate percentages, such as percent of calories from fat in a diet.
- List the major characteristics of the North American diet and the food habits that often need improvement.
- Describe how our food habits are affected by physiological processes, meal size and composition, early experiences, ethnic customs, health concerns, advertising, social class, and economics.
- Identify food and nutrition issues relevant to college students.

Week 2 Chapters 2

Guidelines for Designing a Healthy Diet

8 Learning Objectives

- Develop a healthy eating plan.
- Outline the ABCDEs of nutrition assessment: anthropometric, biochemical, clinical, dietary, and economic.
- Describe what the Recommended Dietary Allowance (RDAs) and other dietary standards represent.
- Learn the food groupings used in MyPyramid.
- List the Dietary Guidelines and the diseases these guidelines are designed to prevent or minimize.
- Describe what a nutrition label currently consists of and the various health claims and label descriptors that are allowed.
- Understand the basis of the scientific method as it is used in developing hypotheses and theories in the field of nutrition.
- Identify reliable sources of nutrition information.

Weeks -3-4 Chapter 3

The Human Body: A Nutrition Perspective

7 Learning Objectives

- Identify the functions of the common cellular components.
- Define tissue, organ, and organ system.

- List some basic characteristics of the 12 organ systems and outline a role for each related to nutrition.
- Outline the overall process of digestion and absorption in the mouth, stomach, small intestine, and large intestine, as well as the roles played by the liver, gallbladder, and pancreas.
- Become familiar with some specific enzymes and hormones that act in digestion.
- Understand the role of genetic background in the development of nutrition related diseases.
- Identify the major nutrition related gastro-intestinal health problems and approaches to treatment.

Week 5 Exam I, Chapters 1-3, 50-60 Multiple choice questions worth one third of your final grade.

Week 6 Chapter 4

Carbohydrates

8 Learning Objectives

- Identify the basic structures and food sources of a major carbohydrates monosaccharides, disaccharides, polysaccharides (e.g., starches), and fiber.
- Describe food sources of carbohydrate and list some alternative sweeteners.
- Explain how carbohydrates are digested and absorbed, including the consequences of lactose maldigestion (and lactose intolerance).
- List the functions of carbohydrate in the body and the problems that result from not eating enough carbohydrate.
- Describe the regulation of blood glucose and discuss how other nutrients can be converted to blood glucose.
- Outline the beneficial effects of fiber on the body.
- State the RDA for carbohydrate and various guidelines for carbohydrate intake.
- Identify the consequences of diabetes, and explain appropriate dietary measures that will reduce the adverse effects of this health problem.

Week 7 Chapter 5

Lipids

8 Learning Objectives

- List four classes of lipids (fats) and the role of each in nutritional health.
- Distinguish between fatty acids and triglycerides.
- Differentiate among saturated, monounsaturated, and polyunsaturated fatty acids in terms of structure and food sources.
- Explain how lipids are digested and absorbed.
- Name the classes of lipoproteins and classify them according to their functions.
- List the function of lipids, including the two essential fatty acids.
- Discuss the implications of various fats, including omega-3 fatty acids, with respect to cardiovascular disease.
- Characterize the symptoms of cardiovascular disease and highlight some known risk factors.

Weeks 8-9 Chapter 6

Proteins

9 Learning Objectives

- Describe how amino acids make up proteins.
- Distinguish between essential and nonessential amino acids.
- Explain why adequate amounts of each of the essential amino acids are required for protein synthesis.
- List the primary functions of protein in the body.
- Calculate the RDA for protein for an adult when a healthy weight is given.
- Describe what is meant by positive protein balance, negative protein balance, and protein equilibrium.
- Distinguish between high-quality and low-quality proteins, identify examples of each, and describe the concept of complementary proteins.
- Describe how protein-calorie malnutrition eventually can lead to disease in the body.
- Develop vegetarian diet plans that meet the body's nutritional needs.

Week 10 Exam II, Chapters 4-6, 50-60 Multiple choice questions worth one third of your final grade. 20% Comprehensive over Chapters 1-3

Week 10 Chapter 7

Energy Balance and Weight Control

7 Learning Objectives

- Describe the uses of energy by the body and what constitutes energy balance.
- Describe various ways to diagnose over-weight and obesity.
- Outline the risks to health posed by over-weight and obesity.
- List and discuss factors affecting energy balance, and describe the concept of set point.
- Describe why and how reduced calorie intake, behavior modification, and increased physical activity fit into a weight-loss plan.
- Outline the benefits and hazards of various weight-loss methods for severe obesity.
- Evaluate popular weight-reduction diets and determine which are unsafe, doomed to fail, or both.

Week 11 Overview of the Micronutrients

Vitamins

6 Learning Objectives

- Define the term vitamin.
- Classify the vitamins according to whether they are fat soluble or water soluble.
- List the major functions and deficiency symptoms for each vitamin.
- List three important food sources for each vitamin.
- Describe toxicity symptoms from excess consumption of certain vitamins.
- Evaluate the use of vitamin supplements with respect to their potential benefits and hazards to the body.

Week 12 Chapter 8 Nutrients Involved in Fluid and Electrolyte Balance

7 Learning Objectives

- List and explain the functions of water in the body.
- List the 4 minerals that function as electrolytes.
- Describe how electrolytes control fluid balance.
- Describe the control mechanisms that regulate water intake and output.
- Identify sources of water in the diet.
- Describe the health consequences of dehydration.
- Describe factors that can contribute to the development of hypertension.
- Classify the minerals as major or trace minerals.
- List conditions of the body, dietary factors, and other pertinent relationships that influence the absorption, retention, and availability of specific minerals.
- List key functions of the major and trace minerals.
- Identify possible deficiency and toxicity symptoms associated with the major and trace minerals.
- List at least two food sources for each of the major and trace minerals.

Week 13 Chapter 9

Nutrients That Function as Antioxidants

7 Learning Objectives

- Describe the term free radical and understand how they can alter normal cell function.
- Describe how antioxidants function to neutralize free radicals.
- List the important micronutrients show to have antioxidant properties.
- List major food sources of antioxidants.
- List the human diseases that have been linked to oxidative damage.
- Define functional foods and phytochemicals.
- Describe the relationship between consumption of nutrients that are rich sources of antioxidants and a decrease risk for disease.

Week 14 Review for final exam!!!!!!

WEEK 15 FINAL EXAM– Absolutely Comprehensive 75-100 questions over Chapters 1-9.

***This exam will be very challenging due to the comprehensiveness so Study Hard!
This exam will count for one third of your final grade in the course.***

Grade Method and Scale:

Explanation of Evaluation:

Evaluation of progress will be solely by way of regularly spaced hourly examinations and one attendance grade. Grading scale is per student handbook with the following values:

90-100 = A

80-89 = B

70-79 = C

Below 70 = F

Assessment Process and Measurements:

There will be 2 hourly exams equally weighted and together comprise 67% of your total grade for the course. The final exam will comprise 33% of your total grade for the course.

Assessment Format:

Each hourly exam will consist of 50-60 questions, a combination of multiple-choice, true/false, or short answer format. Each item will be of equal value. The final exam will consist of 75-100 questions, same combination of question type and each item will be of equal value.

Resources:

Web-based: www.mhhe.com/wardlawcont7

Labs:None

Study Groups:

Study groups are encouraged but are at the initiative of the individual students.

I have office hours and will be happy to meet with individual students or a group of students to help clarify topics that you may find need for clarification.

Essential Policy Information:

Attendance p. 59 Student Handbook:

Regular and punctual attendance at all scheduled classes and laboratories is expected. A student is subject to academic penalty if absences exceed ten percent. Absences exceeding twenty percent subject a student to dismissal from a course. Three (3) incidences of tardiness may constitute an absence. If justifiable cause can be shown for the absenteeism, the student may be permitted to make up missed assignments and maintain enrollment in the class. The hours from these periods will be added to the student's clinic requirements.

Examinations p. 59 Student Handbook:

Students must notify faculty before missing any examination. Students are expected to take intra-term examinations at their scheduled times. If an examination is missed for good and sufficient reason and the student has notified the faculty in advance, a make-up examination may be given subject to a fee of \$25. Such examinations must be made up prior to final examinations. Final exams are to be taken at the scheduled time. If an examination is missed for good and sufficient reason and the student notified the faculty in advance, a make-up examination may be given subject to a fee of \$25.00, which goes into a student scholarship fund. Make-up examinations must be completed with the first week of the next trimester.

Incompletes p. 59 Student Handbook:

Course assignments and examinations must be completed prior to the final examination in that course. Assignments and examinations not completed receive a grade of zero.

Cellular Phones and Pagers p.12 Student Handbook:

Electronic communication devices are to be turned off or placed in silent mode when entering the classroom. This will benefit the learning environment for you, your fellow classmates, and instructors.

Guidance and Counseling p.18 Student Handbook:

The Guidance and Counseling Department is prepared to confidentially assist students, faculty, and staff with personal, relationship, and academic mental health-related issues. With appropriate documentation, the Director of Guidance and Counseling coordinates academic-related special needs with instructors.

Note: Other important policies can be obtained from the current edition of the Student Handbook.