

TEXAS



Chiropractic College

**Division of Technique, Principles and Therapeutics
Department of Clinical Reasoning and Therapeutics**

NUTRITION I SYLLABUS

CP-4330.NT Nutrition I

3 Credit Hours

3 Lecture Hours

0 Lab Hours

TR4 SPRING 2012

COURSE DESCRIPTION:

This course focuses on the study of normal nutrition; including the mechanisms of the various vitamins, minerals, and macronutrients and their roles in normal growth, maintenance and preventative health care.

PREREQUISITES: Systems Pathology I; GE, GU, Endocrine and Neurophysiology

COREQUISITE: Systems Pathology II

Meeting times and places

Monday 10 a.m. L-203

Thursday 9 a.m. R-204

Friday 9 a.m. R-204

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, Iwama Building

Office Hours:

Monday 8 a.m.

Tuesday 8 a.m.

Wednesday 8 a.m. & 11 a.m.

Thursday 8-11 a.m.

Friday 11 a.m.

Because office hours are occasionally utilized for meetings and other activities, it would be advisable to schedule appointments prior to the time of your desired appointment.

Phone: Campus (281) 998-6064

Clinical Office (281) 996-7600

Emergency # (281) 685-2827

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Faculty Support: Michelle (281) 998-6083, Eddie (281) 998-6082

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Edvance360.com/txchiro/

COURSE MATERIALS:

REQUIRED TEXTBOOK:

KRAUSE'S FOOD AND THE NUTRITION CARE PROCESS by L. Kathleen Mahan, Sylvia Escott-Stump and Janice L. Raymond, 13th ed. Elsevier Saunders, 2012

Required readings from these and other reliable resources will be posted on Edvance360 to augment student doctor learning.

The American Journal of Clinical Nutrition

Journal of Nutrition

Nutrition Reviews

Edvance 360:

The course syllabus, course announcements, and the course grades will be posted on Edvance 360 (formally Scholar 360). The web address is: <http://edvance360.com/txchiro/>

CLINICAL COMPETENCIES:

Course content will include the following clinical competencies:

CCE Clinical Competencies

1. History Taking
2. Physical Examination
3. Neuromusculoskeletal Examination
4. Case Management
5. Case follow up and review
6. Nutritional Counseling
7. Record Keeping
8. The Doctor-Patient Relationship
9. Wellness

TCC Clinical Competencies

1. Communication
2. Complementary and Alternative Medicine
3. Evidence Based Practice/Research
4. Nutritional Counseling
5. Referral/Collaborative Care
6. Special Populations

LEARNING OUTCOMES: These are global, programmatic outcomes the student should be “able to do” after successful completion of this course.

1. Demonstrate a good working knowledge of nutritionally related human biochemistry and physiology.
2. Describe the basic processes of human digestion, absorption, metabolism and distribution of the various nutrients derived from a patient’s diet as well as commercially available supplements as it relates to health and wellness.
3. Apply information gleaned through use of the available nutritional and dietetic tools in the practice of nutritional counseling and maintenance of health.
4. Design healthy meals with high biologic value, adequate caloric content, proper mix of proteins, carbohydrates, fats, vitamins and minerals.
5. Access and use efficiently the available clinical data bases necessary to develop nutritional support of health and wellness.

COURSE OBJECTIVES:

1. Define all key terms listed at beginning of each chapter and highlighted terms within the chapters.
2. List the digestive enzymes and describe their secretion, source, substrate and action.
3. Describe carbohydrate malabsorption and subsequent colonic fermentation as it relates to intestinal gas production, cramping and bloating.
4. Differentiate the sites of secretion of the various digestive juices and the particular region of the GI tract common nutrients are absorbed as it relates to short gut syndrome and malabsorption.
5. Compare components of total energy expenditure associated with physical activity, thermogenesis, and basal or resting metabolic rate.
6. Analyze factors affecting Resting Metabolic Rate.
7. Calculate the potential energy derived from various everyday foods.
8. Describe basic carbohydrate composition, classification, and apply this information as you differentiate simple sugars from disaccharides, to complex carbohydrates.
9. Analyze the relative sweetness of sugars and sugar substitutes found in our daily diets.
10. Describe regions of the cell in which the various metabolic pathways take place and their principal end products.
11. Rank foods according to their relative carbohydrate content.
12. Identify fiber types, constituents, nutritional benefits and good sources.
13. Describe basic lipid structure, function, and classification and use that information to describe dyslipidemias.
14. Calculate fat content and fat calories in common foods as you determine which foods to limit in your diet.
15. List the essential fatty acids and qualify their essentiality based on their metabolic end products.
16. Describe the dangers of trans fats in the diet and the tissues affected adversely.
17. Describe basic structure of protein primary, secondary, tertiary, and quaternary and examples in nature.
18. List the essential amino acids and various food combinations that yield them when eaten in combination. Apply that concept as you construct a vegetarian diet.

19. Identify macronutrient use and storage in the fed state vs. the unfed or fasted state.
20. List the vitamins, their activated forms, precursors, metabolism, physiologic function, top three foods they are found in, deficiency signs and symptoms and any known toxic levels.
21. List the macrominerals and microminerals, their primary location in the body and their individual biologic function, and their top 3 food sources.
22. List the top ten leading causes of death in the United States and indicate if nutritional intervention is a feasible treatment or adjunct.
23. Use the Malnutrition Universal Screening Tool (MUST), Mini Nutritional Assessment (MNA) or the Geriatric Nutritional Risk Index (GNRI) to identify patients at risk for malnutrition.
24. Use the Subjective Global Assessment (SGA), the Mini Nutritional Assessment (MNA), or General Food Frequency survey to assess of nutritional status of a classmate or future patient.
25. Discuss the role cytokines play in the nutritional status, the organ they affect and the principal nutritional consequence for that organ.
26. Discuss the various anthropometric measurements and how they relate to wellness vs. disease.
27. Calculate Body Mass Index (BMI) and waist to hip circumference ratio (WHR).
28. Use the quick method to estimate ideal weight based on height.
29. Demonstrate or discuss the proper landmarks and techniques used in skin fold measurement to assess subcutaneous fat.
30. Demonstrate proper technique for measurement of various body circumferences, waist, midarm, and head, and make clinical inferences for each region.
31. Compare body water distribution in an infant vs. adult as well as adult male vs. female.
32. Discuss clinical signs and symptoms as fluid is lost from the body.
33. List the electrolytes in serum and compare indicate their normal range.
34. Indicate function, absorption, excretion, sources and recommended dietary intakes for the electrolytes.
35. Describe acid-base balance in the body and the 4 major acid-base imbalances, their etiologies and their nutritional treatment.
36. List some biological specimen types used in nutritional assessment.
37. Appraise common blood tests, their reference range and their significance in health and nutritional assessment.
38. List common characteristics of urine, their reference range and evaluate their significance in determining the health and nutritional status of a patient.
39. Classify the anemias and indicate which biochemical assessment would be appropriate to differentially diagnose them.
40. Evaluate chronic disease risk assessments and indicate key features screened for.
41. Identify risk factors for development of birth defects and their potential poor outcomes.
42. List key vitamins, minerals, nutrients and their respective tissues influenced during pregnancy.
43. List bone nutrients and their physiological or biochemical processes they catalyze.
44. Describe key nutrients for fetal and neonatal brain development.
45. Determine ideal maternal weight gain for underweight BMI < 18.5, normal BMI 18.5-24.9, overweight BMI 25-30.
46. Summarize nutritional care of the gravid female as you justify the need for each measure.
46. Describe the physiology of milk production and the let down reflex including nutritional and caloric requirements.
47. List macronutrient requirements for infants growth and maturation.

48. Evaluate water requirements for infants and children.
49. List mineral requirements for infants; compare and contrast breast fed vs. formula fed.
50. Evaluate recommended vitamin and mineral supplementation for infants.
51. Compare and contrast characteristics of human milk and cow's milk.
52. Describe satiety behaviors in infants as you would counsel new parents to avoid over feeding.
53. Discuss clinical insight feeding practices of infants and toddlers. Be prepared to make recommendations to mothers and caregivers.
54. Compare and contrast the energy mix and macronutrient requirements for children 1-3yrs vs. 4-18yrs.
55. Compare and contrast vitamin and mineral needs of children 1-3yrs vs. 4-8yrs and 9-18yrs.
56. Compare and contrast protein needs of children 1-3yrs vs. 4-8yrs and 9-13yrs.
57. Evaluate claims that breakfast affects learning.
58. Calculate EER for age group 12-21 years of age.
59. Calculate protein requirements for adolescents
60. List macronutrient requirements for the adolescent.
61. Discuss nutritional screening and lab assessment of the adolescent.
62. Counsel of the adolescent and the parent of the adolescent regarding recommended activity levels and number of servings of the various food groups.
63. Counsel the vegetarian adolescent regarding number of servings of various food groups.
64. Compare and contrast nutrition and food related behaviors of the age group 22-64 years and 65 years and beyond.
65. List functional foods and evaluate their health promoting properties of each.
66. Evaluate nutrient needs changes in the 22-64 and the 65plus groups.
67. List possible health promoting effects of moderate alcohol intake as you counsel the binge drinker.
68. Describe the detoxifying organs, the detoxification process, and evaluate phytochemicals that claim to enhance that process.

TEACHING PHILOSOPHY

In a modern, average chiropractic practice, it is imperative that a prudent D.C. 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.

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

The responsible student will:

- come to class,
- take notes,
- learn the material presented,
- participate in classroom discussion,
- prepare well ahead of time for exams.

Last day to drop and/or add.....Friday January 20th 2012

Last day to withdraw.....Friday March 02nd 2012

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:

Monday January 16th – Martin Luther King Jr. Day

Monday February 20th – President's Day

March 16th – 18th – NBCE Exams

Friday April 06th – Good Friday

Monday April 16th – Student Study Day

Final Exam Week..... April 17th – 24th

TENATIVE OUTLINE OF COURSE CONTENT:

Week 1 & 2

Chapter 1 Intake: Digestion, Absorption, Transport and Excretion of Nutrients

Chapter 2 Intake: Energy Acquisition and Expenditure

Week 3 & 4

Chapter 3 Intake: The Nutrients and Their Metabolism

Week 4 Exam I, Chapters 1-3; Multiple choice and fill in the blank style questions. This exam is worth one third of your final grade in the course.

Week 5

Chapter 4 Intake: Analysis of the Diet

Week 6

Chapter 6 Clinical: Inflammation, Physical and Functional Assessments

Week 7

Chapter 7 Water Electrolytes and Acid-Base Balance

Week 8

Chapter 8 Clinical: Biochemical Assessment
Introduction to Clinical Lab Diagnosis

Week 8

Exam II, Chapters 4, 6, 7, and 8; Multiple choice and fill in the blank style questions worth one third of your final grade in the course.

Week 9

Chapter 16 Nutrition in Pregnancy and Lactation

Week 10

Chapter 17 Nutrition in Infancy

Week 11

Chapter 18 Nutrition in Childhood

Week 12

Chapter 19 Nutrition in Adolescence

Week 13

Chapter 20 Nutrition in the Adult Years

Weeks 14

Chapter 22 Nutrition in Aging

Week 15

Final Exam Comprehensive with emphasis on chapters covered after Exam II. Multiple choice and fill in the blank style questions. This exam is worth one third of your grade in the course.
GRADE METHOD AND SCALE

Explanation of Evaluation:

Evaluation of progress will be solely by way of regularly spaced hourly examinations. 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 of the hourly exams will consist of 50-60 questions of multiple-choice and fill in the blank format. Each item will be of equal value. Your final will consist of 75-100 questions and will follow the similar format.

Essential Policy Information:

“For specific procedures on how each policy is enforced see the Student Handbook.”

Attendance: Regular and punctual attendance at all scheduled classes is expected. A student is subject to academic penalty, loss of 10% of grade in the course, if absences exceed **ten percent**. Absences exceeding **twenty percent** subject a student to dismissal from the course. Three incidences of tardiness will constitute an absence.

This lecture and lab course meets for 15 weeks (3 hours per week). The total amount of seat time is 45 hours. **Over ten percent** of this time would be **5 missed classes**. Miss 5 classes and you will lose 10% of your grade. Over twenty percent of this time would be 10 missed classes. **I will give you a “WF” if you miss 10 classes.**

Missed Examinations:

Students must notify faculty before missing any examination. If an examination is missed for good and sufficient reason and the student has notified the faculty member in advance, a make-up examination may be given subject to a fee of \$40.00. The fee for the make-up examination is a minimum of \$75.00 if a standardized patient is required for the exam. Additional required standardized patient hours may increase this \$75.00 minimum fee. All intra-term examination must be made up prior to final examinations. Missed final examinations must be made up within the first week of the next semester. A student may be allowed a maximum of two missed examination dates for good and sufficient reason per trimester. These two missed examination dates are for all enrolled courses in a trimester, not for each individual course. Any request for additional make-up examinations will require documentation substantiating the absence and must be approved by the Dean of Academic Affairs.

You have 2 weeks from the date you return to make up exams missed during the trimester.

Students arriving late for written examinations will not be allowed extra time. Students arriving late after an examinee has turned in their test will not be allowed to take the written examination and must schedule an appointment for a make-up provided they have appropriate acceptable documentation as to why they were late.

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

Classroom Management Policy: TCC is committed to the fundamental principles of freedom of speech, including controversial positions taken in the classroom by faculty and/or students. However, all types of speech and behavior must be balanced with principles of appropriate classroom behavior in a professional school. Faculty have a right to establish clear expectations in this regard and students should share the responsibility for maintaining an appropriate, orderly learning environment. Students who fail to adhere to the behavioral expectations outlined by the instructor (either in the syllabus or at the time the behavior occurs) may be subject to discipline in accordance with the procedures described below and the College's Student Discipline Policy (see Student Handbook).

Identification of disruptive behavior by students may include but is not limited to:

Mild to moderately disruptive behavior;

Persistent speaking without permission

Engaging in activities not related to the class

Inappropriate use of computers, cell phones or other electronic devices

Sleeping in class

Chronically entering class late or leaving early

Eating or drinking in the classroom if the faculty members syllabus specifically disallows it

Disputing authority in an argumentative or disrespectful manner with faculty and/or other students

Moderate to severely disruptive behavior;

Verbal or physical threats

Physical altercations

Destruction of property

Cellular phones/Electronic Devices: Electronic communication devices are to be turned off or placed in silent mode when in the classroom. These devices are **NOT** allowed to be on your person during testing situations. Cellular phones may **NOT** be answered during class time without prior permission from the faculty member. Texting or e-mailing is **NOT** allowed during class time. All devices will be confiscated if used during class and the student will lose 10% of their final total grade per offense. There is **NO** warning on this issue. Refusal to turn over your electronic device constitutes "insubordination" and an incident report will be filed.

You may only use your lap top for taking notes and following along with Dr. Coats' power point. Should you have any other screen up you will lose the privilege of using a lap top in ALL class you have now or will have in the future with Dr. Coats. This will be considered unprofessional conduct and you will lose 10% of your final grade.

Guidance and Counseling: The Guidance and Counseling Department is prepared to confidentially assist you with personal, relationship or academic issues. With appropriate documentation, the Director of Guidance and Counseling coordinates academic related special needs with instructors.

Plagiarism: "Plagiarism is defined as copying or paraphrasing information from any published

or non-published source, except for properly referenced citation, and presenting this material as one's own, original work for credit in a course. Plagiarism is considered the equivalent of cheating." **I will give you a "WF" if you are given an individual assignment and you do it with someone else. I will give you a "WF" if you cut and paste material from anywhere (internet, other professor's slides) and turn it in as your own work. All turned in work is to be a summary of material in your own words whether it is referenced or not.**

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

THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THIS SYLLABUS AT ANY TIME. ANY CHANGES WILL BE NOTED VERBALLY (in class) AND IN WRITING (Edvance 360).