



SCHOOL OF  
APPLIED CLINICAL  
**NUTRITION**  
at New York Chiropractic College

## COURSE DESCRIPTIONS

### **NTR5101 Macronutrients: Carbohydrates, Fats and Proteins**

Course Description: This course is designed to explore the physiologic mechanisms of carbohydrate, fat and protein metabolism; the function of macronutrients in the body; how each macronutrient, alone and when combined, undergoes integrated metabolism in tissues; and how the ingestion of combined macronutrients affects overall metabolism as well as disease risk and recovery. Suggestions for client counseling on these issues will be presented.

### **NTR 5102: Micronutrients: Vitamins, Minerals and Amino Acids**

Course Description: This is a course evaluating micronutrients (vitamins, minerals, amino acids) and their interactions on human cellular metabolism. The course curriculum includes a review of micronutrients from a historical perspective; their dietary use in industrialized countries; food sources of micronutrients; nutrient functions with respect to human physiological functions; the variability of requirements across populations; signs and symptoms of deficiencies and toxicities; knowledge of dosages for absorbable forms of each nutrient; disease prevention and nutritional therapy; as well as nutrient interactions as a result of metabolic processes.

### **NTR5204 Clinical Nutrition for Pain and Inflammation**

Course Description: This course is designed to facilitate the use of diet therapy and basic nutrition supplements in clinical practice. The focus is nutrition applications to reduce inflammation and pain. The biology of the inflammatory process is explored in significant detail and related to the process of nociception and pain. Also examined is the relationship between chronic inflammation and various degenerative diseases such as cancer, heart disease, syndrome X, Alzheimer's disease, depression, cold/flu symptoms, and other conditions. Practical nutritional applications including both dietary therapies and supplements directed at reducing inflammation are reviewed in detail.

### **NTR 5205: Research Methods and Applied Statistics**

Course Description: This course is designed to introduce the graduate student to typical methods in analyzing biomedical data using descriptive and inferential statistics. This course will help guide the graduate student in developing research studies, conducting statistical analyses and reading / evaluating the literature.

### **NTR5302: Pharmacognosy**

Course Description: This is an advanced course focusing on the use of natural materials (plants, fungi, marine organisms and others) as therapeutic agents, a study known as phytotherapy. Plants have

yielded many important medicines in the past and one of the course objectives is to better understand the pharmacological and biological effects of medicinal plants used around the world. The biochemical constituents of plant extracts and the isolation of their active components, as well as clinical studies are explored.

#### **NTR 5304: Study Design and Critical Evaluation of the Literature**

Course Description: This advanced course is designed to break the barriers between the clinical and academic world so that the student develops the ability to use cutting edge academic research to guide their clinical practice. Upon course completion the student will be able to identify study design, population selection, and analytical methodology appropriate for both infectious and chronic disease outcomes of varying severity, duration, and population prevalence. The course includes a critical review of a number of current journal articles in the field of nutrition. Additionally, students are expected to produce a capstone paper integrating knowledge from their previous courses to create a critical evaluation of the literature on a student-chosen clinical nutrition research topic.

#### **NTR5402 Drug Induced Nutrient Depletion & Herb/Drug Interaction**

Course Description: This is an interactive course describing the numerous drugs that can cause depletions through a variety of biochemical mechanisms. Depletion of nutrients can lead to alterations in physiology leading to side effects, adverse clinical symptoms and disease. This course reviews the most significant drug induced nutrient depletions and their impact on the body. This course also reviews the most significant herb/drug interactions and provides a evaluation of databases and information relating to this topic. Scientific studies that report, verify, and explain these two prominent issues in integrative care are discussed.

#### **NTR5404 Developmental Nutrition**

Course Description: This course focuses on the fundamentals of nutrition and health from preconception to old age. Special attention is paid to the clinical and nutritional interventions that apply to each part of the life cycle. In addition to the review of essential nutrition concepts, physiological principles and nutritional recommendations, case studies representing each stage in the life course are reviewed with careful consideration of socioeconomic and cultural diversity, and effective client counseling.

#### **NTR 5501: Exercise Physiology and Sports Nutrition**

Course Description: This course is designed to develop an understanding of exercise physiology as a basis for acute and chronic biological adaptations to physical activity and sport. Additionally, adaptations in macronutrients and micronutrients metabolism to fuel energy systems will be explored. Popular performance enhancing and weight loss supplements will be examined. Exercise physiology for clinical populations including cardiopulmonary disorders, obesity, neuromusculoskeletal disorders, aging and female-specific issues will also be studied. Methods for marketing techniques to build your practice will be included in the final modules.

**NTR5503: Nutrition Assessment**

Course Description: This course reviews the array of assessment tools used in clinical nutrition practice including methodology, application, implications, strengths and limitations. Clinical nutrition not only assesses deficiency states, but can be used to improve health by optimizing food selection and nutrition supplementation needs. A clinical and laboratory assessment allows the health care provider the opportunity to develop an individualized therapeutic program. No single test can provide a complete nutrition assessment for an individual, therefore, the healthcare provider needs to know and understand the options of choices available to evaluate nutritional status.

**NTR5601: Therapeutic Nutrition**

Course Description: This is an advanced course focusing on the use of nutrition therapy in the management of health and disease. Specific nutrition intervention including diet, vitamins, minerals, botanicals, essential fatty acids and amino acids are explored for a wide variety of diseases commonly encountered in clinical practice. The biochemistry of each intervention is discussed for a full understanding of how to integrate nutrition therapy into patient care.

**NTR5602: Food Science**

Course Description: This course is designed to provide an overview of food science and technology and how they influence food safety, food quality, and nutritive content in a rapidly changing global marketplace.