Clinical Nutrition

Degree Offered
Master of Clinical Nutrition

Chair
Scott M. Grundy, M.D., Ph.D.

Program Director
Jo Anne S. Carson, Ph.D., R.D.

Faculty and Academic Interests

Jo Ann S. Carson, Professor
Ph.D., University of Texas at Austin, 2000
Nutrition in cancer and heart disease; nutrition education; nutrition in medical education.

Scott M. Grundy, Professor
M.D., Baylor College of Medicine, 1960; Ph.D., Rockefeller University, 1968
Cholesterol; nutrition; atherosclerosis.

Gloria Lena Vega, Professor
Ph.D., Louisiana State University Medical Center, 1979
Biochemistry of atherosclerosis; clinical nutrition; primary and secondary hyperlipidemia.

Elizabeth J. Parks, Associate Professor
Ph.D., University of California, Davis, 1990
Fatty acid and cholesterol synthesis and metabolism.

Cynthia Cunningham, Assistant Professor
M.S., Indiana Purdue University at Indianapolis, 1973
Pediatric nutrition; nutrition support.

Bernadette Latson, Assistant Professor
M.S., University of Florida, 1981
Geriatric nutrition; eating disorders; diabetes.

Linda Michalsky, Assistant Professor
Ph.D., University of Texas at Austin, 2002
Nutrition education and evaluation; nutrition in prevention and treatment of obesity and chronic disease.

Lona Sandon, Assistant Professor
M.Ed., University of Texas at Brownsville, 2002
Career counseling; sports and wellness nutrition; educational technology.

Meena Shah, Clinical Associate Professor
Ph.D., London University, 1986
Prevention and treatment of cardiovascular risk factors; weight loss and maintenance.

Joyce P. Barnett, Clinical Assistant Professor
M.S., Case Western Reserve University, 1970
Weight management; diabetes; pediatric nutrition.

Vickie A. Vaclavik, Clinical Assistant Professor
Ph.D., Texas Woman’s University, 1989
Food science; food safety and sanitation; food-service management.

Lora Day, Clinical Instructor
M.A., University of Texas at Austin, 1987
Nutrition support in adults; gastrointestinal disease.

Susan G. Rodder, Clinical Instructor
M.S., Texas Woman’s University, 1991
Nutrition in preventive cardiology.

Description of the Program

The Master of Clinical Nutrition offers the opportunity to develop an advanced level of knowledge and skill so clinicians can address the complex nutritional issues of healthy and ill individuals at various stages of the life span. Two tracks are available.

The first track, the Master of Clinical Nutrition Coordinated Program, provides didactic course work and supervised practice to meet the knowledge and competency requirements of the American Dietetic Association Commission on Accreditation of Dietetics Education. Graduates of this program are eligible to take the Registration Exam for Dietitian and to apply for licensure in the state of Texas. They also are eligible for active membership in the American Dietetic Association.

The second track, the Master of Clinical Nutrition for Health Professionals, is available to individuals who are already registered dietitians or other licensed health care professionals. Having previously met the academic and clinical requirements to become a licensed clinician, these students do not complete supervised practice, but they do complete academic coursework to pro-
vide high-level nutritional care with greater emphasis and time devoted to completion of a research project.

**Master of Clinical Nutrition Coordinated Program**

The Master of Clinical Nutrition Coordinated Program prepares students to address the nutritional and health needs of society as registered dietitians. Registered dietitians individualize nutrition therapy to optimize management of such diseases as diabetes, hypertension, obesity and cancer.

The program uses the unique resources of the medical center to prepare graduates to become registered dietitians capable of meeting the demands of the changing health care system. Having developed a strong knowledge base in clinical nutrition, graduates use food and nutrition information effectively in prevention and treatment of disease. Individualized experiences facilitate students’ pursuit of their own career goals, whether in health care, in research or as a nutrition authority for the public.

**Objectives**

The goal of the coordinated program is to graduate team-oriented clinicians ready to function in acute, chronic and community settings with evidence-based nutrition therapy. With a concentration in nutrition therapy, the program builds on a science foundation to develop the skills to:

1. Assess the nutritional needs of individuals, based on lifestyle and health status;
2. Provide medical nutrition therapy for patients of all ages across a spectrum of settings from intensive care to home care;
3. Integrate interpretation of biochemical parameters and medications in the nutrition-care process;
4. Adapt nutrition counseling strategies to overcome barriers to lifestyle change;
5. Function within interdisciplinary teams to provide nutritional support for patients with complex medical problems;
6. Provide culturally competent nutrition education to populations with diverse nutritional needs;
7. Incorporate knowledge of functional foods, phytochemicals and food processing, as well as knowledge of nutrient gene interactions to serve as a food and nutrition authority for the public through mass media and other nutrition information venues;
8. Interpret evidence-based research and formulate research hypotheses to advance evidence-based dietetics practice; and
9. Manage human, material and financial resources in food and nutrition-related businesses.

Graduates of the program may assume positions in hospitals, clinics, nursing-care facilities and home health care agencies. They may focus on clinical areas such as pediatrics, diabetes, cardiac rehabilitation or cancer. Others may pursue opportunities in fitness and wellness programs, schools, community health programs and industry.

**Accreditation**

The coordinated program is granted accreditation with an emphasis in nutrition therapy by the Commission on Accreditation for Dietetics Education of the American Dietetic Association (www.eatright.org/CADE), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606, 312-899-0040.

**Requirements for Admission**

The Admissions Committee of the Department of Clinical Nutrition determines the admissibility of an applicant into the program in accordance with the quality of his or her credentials. The department works in cooperation with the Office of the Registrar of UT Southwestern Medical Center and with the approval of the dean of UT Southwestern School of Health Professions. Admission requirements are:

1. Baccalaureate degree from a regionally accredited institution prior to matriculation;
2. Completion of all admission course requirements as outlined in the following chart;
## COORDINATED PROGRAM IN CLINICAL NUTRITION PREREQUISITE COURSE REQUIREMENTS

<table>
<thead>
<tr>
<th>COMPONENT AREAS</th>
<th>COMMON COURSE NUMBERS</th>
<th>CREDIT HOURS</th>
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<tr>
<td><strong>Communication</strong></td>
<td></td>
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<tr>
<td>English (at least 3 hours of English composition; technical writing also is recommended)</td>
<td>ENGL 1301, 1302, 1311, 1312, 2311, 2314, 2315 or equivalent</td>
<td>6</td>
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<tr>
<td><strong>Mathematics</strong></td>
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<tr>
<td>College Algebra (or higher-level math course)</td>
<td>MATH 1314 or higher</td>
<td>3</td>
</tr>
<tr>
<td>Statistics</td>
<td>MATH 1342 or 2342</td>
<td>3</td>
</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Chemistry with laboratory*</td>
<td>CHEM 1411 or 1412 or 1413</td>
<td>4</td>
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<tr>
<td>Organic Chemistry with laboratory*</td>
<td>CHEM 2423</td>
<td>4</td>
</tr>
<tr>
<td>Biochemistry*</td>
<td>Must be upper-division course</td>
<td>3</td>
</tr>
<tr>
<td>Microbiology*</td>
<td>BIOL 2321 or 2421</td>
<td>3</td>
</tr>
<tr>
<td>Human Physiology* (must include all body systems)</td>
<td>BIOL 2401 &amp; 2402 or 2301 &amp; 2302</td>
<td>4</td>
</tr>
<tr>
<td>Genetics*</td>
<td>BIOL 2316 or 2416</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Nutrition*</td>
<td>BIOL 1322, NUTR 1322 or HECO 1322</td>
<td>3</td>
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<tr>
<td><strong>Social and Behavioral Sciences</strong></td>
<td></td>
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<tr>
<td>Sociology, Psychology or Anthropology</td>
<td>PSYC 2301, SOCI 1301, ANTH 1301 or higher</td>
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<tr>
<td>Principles of Management or Introduction to Business</td>
<td>BMGT 1303 or equivalent, or BUSI 1301 or equivalent</td>
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* All science prerequisites must be completed upon enrollment with a grade of “C” or higher.

Texas Common Course numbers are provided for guidance. Information is available online at www.tccns.org. Click on “The Academic Course Guide Manual.” Applicants should contact academic advisers at their college or university to determine course equivalencies prevailing on their home campus. Applicants are encouraged to contact the UT Southwestern Admissions Office or the academic program about other courses that may satisfy course requirements. College Level Examination Program and Advanced Placement credit may be accepted for course requirements as long as such credit has previously been accepted and indicated on the applicant’s transcript by a previously attended college or university.

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3) Graduate Record Examination;
4) A recommended minimum of a 3.0 prerequisite and a 3.0 overall grade-point average;
5) Ability to perform essential functions as described in this chapter;
6) Completion of online application and submission of $10 fee;
7) Official transcripts from all schools attended;
8) Three letters of recommendation;
9) Personal interview;
10) Personal statement of career goals; and
11) Work experience.

Because admission into the Clinical Nutrition program is competitive and made on a space-available basis, the following are given special consideration in the selection process.

1) Overall grade-point average;
2) Science grade-point average;
3) Last 60 hours GPA;
4) The three letters of recommendation;
5) Personal interview;
6) Personal statement of career goals; and
7) Work experience.

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## INTERNATIONAL APPLICANTS

Foreign transcripts must be evaluated by a transcript evaluation agency, TOEFL is required.
**ESSENTIAL FUNCTIONS**

In addition to essential functions for all students (see Entrance Requirements in the Student Information chapter), each student in the Clinical Nutrition program must be able to:

1) Participate in supervised practice activities for eight-hour days;
2) Demonstrate sufficient problem-solving skills to assess multifactorial aspects of nutritional care and organize and prioritize necessary tasks within time constraints;
3) Demonstrate sufficient vision, smell and taste to evaluate the appearance, aroma and flavor of food;
4) Demonstrate sufficient upper-body strength and manual dexterity to operate and clean household and institutional equipment required for food preparation and food service; and
5) Demonstrate sufficient vision to observe compliance with food sanitation and safety codes.

**CURRICULUM**

The Master of Clinical Nutrition Coordinated Program is a full-time graduate program encompassing two years with six semesters. The curriculum includes both academic course work and supervised practice. Supervised practice and some classroom courses are offered during the typical work day; some course work is available online or in the early evening.

Students have supervised practice in prominent Dallas health care facilities under the direction of both staff dietitians and faculty members who are registered dietitians. Current trends in health care are considered as students train in ambulatory-care and long-term care facilities, home-health agencies, work site wellness programs, schools and community settings, in addition to acute-care hospitals.

**PROGRAM OF INSTRUCTION**

### Year One

**FALL**

- CN 5310 Nutrition Care Process 3
- CN 5321 Communication and Behavior Change 3
- CN 5222 Nutrition in Wellness 2
- CN 5331 Food Science and Technology 3
- CN 5340 Nutrition in Metabolism 3
- HCS 5106 Professional Development 1
- CN 5250 Nutrition Care Process Practicum 2
- **Total 17**

**SPRING**

- CN 5311 Medical Nutrition Therapy in Chronic Care 3
- CN 5332 Food Service Management 3
- CN 5341 Nutrition in Growth and Development 3
- CN 5002 Special Topics 1
- HCS 5330 Health Care Research 3
- CN 5351 Chronic Care Medical Nutrition Therapy Practicum 3
- **Total 16**

**SUMMER**

- CN 5312 Medical Nutrition Therapy in Acute Care 3
- CN 5242 Nutrition in Aging 2
- CN 5452 Acute Care Medical Nutrition Therapy Practicum 4
- **Total 9**
Year Two

FALL

<table>
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<tr>
<th>Course Code</th>
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<td>CN 5313</td>
<td>Medical Nutrition Therapy in Pediatrics</td>
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<td>CN 5353</td>
<td>Advanced Medical Nutrition Therapy Practicum</td>
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<td>CN 5360</td>
<td>Education and Community Nutrition Practicum</td>
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<td>CN 5370</td>
<td>Food Service Practicum</td>
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<td>CN 5223</td>
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<td>CN 5233</td>
<td>Business of Health Care</td>
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<td>CN 5954</td>
<td>Integrated Nutrition Practicum</td>
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SUMER

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<th>Course Title</th>
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<tr>
<td>CN 5390</td>
<td>Nutrition Research</td>
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<td>Program total</td>
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Special Requirements

For a student to enroll in any required course in the curriculum, all prerequisite courses must be completed with a grade of C or better. Failure to meet the specifications of a student’s degree plan may prohibit that student from enrolling in the subsequent semester or from graduating from the program.

Graduation Requirements

A candidate for the degree of Master of Clinical Nutrition at UT Southwestern School of Health Professions must meet all of the following requirements:

1) The student must demonstrate a high order of scholarly achievement in clinical nutrition, including appropriate research and professional competencies. The program’s Student Progress Committee determines whether adequate mastery has been acquired.
2) The student must complete satisfactorily the minimum semester hours at UT Southwestern School of Health Professions. For the Master of Clinical Nutrition Coordinated Program, the minimum is 71 semester hours. For the Master of Clinical Nutrition for Health Professionals, the minimum is 36 semester hours.
3) The student must discharge all financial obligations to the medical center. In the event of nonpayment, one or more action may be taken by the dean: a) readmission may be denied; b) a student’s grades and official transcript may be withheld; and c) the degree to which the student would otherwise be entitled may be withheld.
4) The student must maintain at least a 2.75 cumulative grade-point average, have no academic deficiencies and no incompletes.
5) The student must complete the academic requirements listed on his or her degree plan, including completion of any academic deficiencies in prerequisite courses, by the time stated in the student’s official letter of acceptance. The student is responsible for submitting official documentation of successful completion of the prerequisites to the Office of the Registrar.
6) The student must complete all required courses in the degree plan with a grade of C or higher (P for Pass/Fail courses) while maintaining at least a 2.75 cumulative grade-point average. Students in the Coordinated Program must receive practical evaluations reflecting an acceptable level of performance and professional conduct and complete all required supervised practice.
7) The student must successfully complete a graduate project.

Master of Clinical Nutrition for Health Professionals

The Master of Clinical Nutrition for Health Professionals is designed to advance the skills and knowledge in nutrition of registered dietitians and other health professionals. Available to part-time students, this graduate degree program builds on current professional skills and exposes students to the latest clinical nutrition research. The degree is designed to prepare graduates for the growing challenges of caring for the health care needs of Americans.
**OBJECTIVES**

This graduate degree program offers the opportunity to strengthen and extend professional health care skills to enhance opportunities for job flexibility and upward mobility. It includes opportunities to develop or refine the health care professional’s ability to:

1) Use the nutrition diagnoses and other components of the nutrition care process in patient care and documentation;
2) Provide nutritional care in multiple health care settings, from pediatrics to geriatrics;
3) Collaborate within interdisciplinary teams to provide nutritional support for patients with complex medical problems;
4) Provide culturally competent nutrition education to populations with diverse nutritional needs;
5) Serve as an authority on food and nutrition information for the public through mass media and other nutrition information venues; and
6) Conduct evidence-based research to support the practice of clinical nutrition.

Classes and research opportunities reflect the rich research and clinical care environment of UT Southwestern Medical Center. Students are exposed to current nutrition research. They interact with practicing health care professionals and researchers as they learn about evidence-based care and cost-effective treatment options. Classroom and research experiences facilitate students’ pursuit of individual career goals in health care, research or nutrition communications.

**REQUIREMENTS FOR ADMISSION**

Admission requirements for the Master of Clinical Nutrition for Health Professionals are the same as those listed for the Master of Clinical Nutrition Coordinated Program (see earlier section) plus evidence of being a registered dietitian or a licensed health professional in a profession recognized by the Texas Department of State Health Services.

**CURRICULUM**

Students in the program complete 36 semester hours. They may enroll as part-time or full-time students to complete the degree within a minimum of fifteen months and a maximum of six years. Some classroom courses are offered during the typical work day; others are available online or scheduled in the early evening.

**PROGRAM OF INSTRUCTION**

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
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<tr>
<td>CN 5310 Nutrition Care Process</td>
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<td>CN 5311 Medical Nutrition Therapy in Chronic Care</td>
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<tr>
<td>CN 5312 Medical Nutrition Therapy in Acute Care</td>
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<tr>
<td>CN 5340 Nutrition in Metabolism</td>
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<td>CN 5390 Nutrition Research</td>
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<tr>
<td>HCS 5330 Health Care Research</td>
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<td><strong>Total</strong></td>
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In addition, students must take six semester hours of Clinical Nutrition electives and 12 semester hours of general electives, for a total of 36 semester hours. General electives may be selected from CN courses and courses offered by other departments and schools within UT Southwestern Medical Center, as well as the School of Public Health of the University of Texas Health Science Center at Houston.

**SAMPLE CURRICULUM SEQUENCE**

**Year One**

<table>
<thead>
<tr>
<th>FALL</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>CN 5310 Nutrition Care Process</td>
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<tr>
<td>CN 5340 Nutrition in Metabolism</td>
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<td>CN 5002 Special Topics</td>
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<table>
<thead>
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<th>SPRING</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>CN 5311 Medical Nutrition Therapy in Chronic Care</td>
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<td>HCS 5330 Health Care Research</td>
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<th>SUMMER</th>
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<tbody>
<tr>
<td>CN 5312 Medical Nutrition Therapy in Acute Care</td>
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<td>CN 5002 Special Topics</td>
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Clinical Nutrition

Year Two

FALL

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<tr>
<td>CN 5390 Nutrition Research</td>
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<td>Clinical Nutrition Elective</td>
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<td>General Elective</td>
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SPRING

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<tr>
<td>General Electives</td>
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SUMMER

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Special Requirements

See requirements listed under Master of Clinical Nutrition Coordinated Program.

Graduation Requirements

The Master of Clinical Nutrition for Health Professionals requires satisfactory completion of 36 semester credit hours and other criteria listed under graduation requirements for the Master of Clinical Nutrition Coordinated Program.

Course Descriptions

CN 5002 Special Topics
1-3 Semester Hours
This course is designed to provide the most recent scientific information on issues of current concern, such as weight management, women’s health, critical care or metabolism.

CN 5202 Special Topics in Sports Nutrition
2 Semester Hours
This course covers nutritional aspects for the elite athlete and the active adult or adolescent. Topics include fluids, carbohydrates, protein, health assessment, weight management, vitamins, minerals and dietary supplements. Issues related to special populations are addressed, including vegetarianism, diabetes and the female athlete triad.

CN 5222 Nutrition in Wellness
2 Semester Hours
Approaches to prevention of disease through nutrition and other lifestyle interventions are introduced. Community health programs are described. Steps in the development of a community nutrition intervention are presented. Students plan a community nutrition program, including marketing strategies and process and outcome evaluation methods.

CN 5223 Nutrition in Media Communications
2 Semester Hours
Students develop skills in translating scientific nutrition statements into meaningful messages for the mass media and the lay consumer. They produce written educational materials that promote health, wellness and positive lifestyle choices.

CN 5233 Business of Health Care
2 Semester Hours
This course applies principles of management and business theory to the delivery of health care. Content covered includes cost-benefit analysis, billing and reimbursement for health care services, analysis of financial data, fiscal accountability, and development of business plans and budgets.

CN 5242 Nutrition in Aging
2 Semester Hours
This course presents overall biologic, social and behavioral aspects of aging, in addition to prevention and treatment of age-related chronic diseases and conditions. Nutritional needs in aging, altered by physiology, lifestyle and sociocultural factors are studied. The continuum of health services emerging to meet the needs of aging adults are reviewed, along with the integration of nutrition services in promoting optimal interdisciplinary health outcomes.

CN 5250 Nutrition Care Process Practicum
2 Semester Hours
In this introductory practicum course, students gather data from electronic health records. Students perform the nutrition care process on clients, including conducting nutrition physical examinations and developing nutrition diagnoses.

CN 5310 Nutrition Care Process
3 Semester Hours
This course introduces the role of registered dietitian in the nutrition care process and evidence-based practice. The Scope of Practice and Code of
Ethics are covered. Assessment of nutritional status, differentiation of nutrition diagnoses, and creation of problem, etiology, signs and symptoms statements are included. Students may develop skills in basing interventions and evaluation on the nutrition diagnoses. The use of standardized nutrition language and the medical record are included.

**CN 5311 MEDICAL NUTRITION THERAPY IN CHRONIC CARE**
**3 SEMESTER HOURS**
The role of food, nutrition and lifestyle choices in health promotion and disease prevention are discussed. The focus is on obesity, cardiovascular disease, diabetes and some gastrointestinal disorders. Related pathophysiology and pharmacology are covered. 
*Prerequisite:* CN 5310 or consent of instructor

**CN 5312 MEDICAL NUTRITION THERAPY IN ACUTE CARE**
**3 SEMESTER HOURS**
Students apply the nutrition care process in providing evidence-based medical nutrition therapy for patients with significant needs for nutrition support, including those with diseases of the gastrointestinal and renal systems, HIV, cancer or trauma. Related pathophysiology and pharmacology are covered.
*Prerequisite:* CN 5311 or consent of instructor

**CN 5313 MEDICAL NUTRITION THERAPY IN PEDIATRICS**
**3 SEMESTER HOURS**
This course applies principles of medical nutrition therapy to the care of infants, children and adolescents. Students use growth charts to assess and interpret growth status of pediatric patients. Selection and use of specialized infant formulas to promote appropriate growth in children with a variety of chronic and acute conditions, including genetic disorders, are covered.
*Prerequisite:* CN 5312 and CN 5341; or consent of instructor

**CN 5321 COMMUNICATION AND BEHAVIOR CHANGE**
**3 SEMESTER HOURS**
Theories of behavior change and principles of counseling to promote lifestyle change are covered in the context of nutrition issues. A system for planning nutrition education and communication with individuals and groups is introduced.

**CN 5331 FOOD SCIENCE AND TECHNOLOGY**
**3 SEMESTER HOURS**
Principles of food science are applied to the development of food products that appeal to consumers based on appearance, texture, flavor and nutritional content. The roles of various ingredients in processed foods and functional foods are covered. Other topics include food irradiation, genetically modified foods, organic foods, food safety and sustainable agriculture. (2 credits lecture; 1 credit lab)

**CN 5332 FOOD SERVICE MANAGEMENT**
**3 SEMESTER HOURS**
This course covers management of resources in the procurement, production, distribution and service in food-service systems. Development of menus for a variety of group settings is presented with attention to culture, nutritional needs, culinary skills and resource allocation. Policies and procedures, marketing, and government regulations are included.

**CN 5340 NUTRITION IN METABOLISM**
**3 SEMESTER HOURS**
Nutritional science concepts are presented within the context of human metabolism. In providing...
the scientific foundation for nutrition therapy, this course covers nutrient functions, bioavailability, clinical signs of inadequate and excessive intake, and biochemical methods of evaluating status. Achieving nutritional requirements from food and/or supplements is addressed, with attention to emerging issues related to nutrigenomics.

**CN 5341 NUTRITION IN GROWTH AND DEVELOPMENT**  
3 SEMESTER HOURS  
Normal nutrition needs during growth and development from preconception through adolescence are covered. Sociological and environmental aspects that influence the outcome of pregnancy are explored. Students have the opportunity to become acquainted with the benefits of breastfeeding and to learn how to promote breastfeeding by recognizing reliable resources for new mothers. Appropriate progression of feeding from infancy throughout childhood is addressed, with an introduction to use of growth charts for assessing growth of infants and children.

**CN 5351 CHRONIC CARE MEDICAL NUTRITION THERAPY PRACTICUM**  
3 SEMESTER HOURS  
Students provide evidence-based nutrition therapy for clients in wellness and clinic settings. Nutrition for prevention and treatment of obesity, cardiovascular disease, diabetes and some gastrointestinal disorders is addressed.  
*Prerequisite:* CN 5250

**CN 5353 ADVANCED MEDICAL NUTRITION THERAPY PRACTICUM**  
3 SEMESTER HOURS  
The student provides medical nutrition therapy to specific populations, including pediatric clients.  
*Prerequisite:* CN 5452

**CN 5360 EDUCATION AND COMMUNITY NUTRITION PRACTICUM**  
3 SEMESTER HOURS  
In this course the student is afforded the opportunity to practice nutrition education and counseling in community settings, such as community clinics and public health programs.  
*Prerequisite:* CN 5250, CN 5321

**CN 5370 FOOD SERVICE PRACTICUM**  
3 SEMESTER HOURS  
Within a food service operation, the student coordinates procurement, production, distribution and service of food. Attention is given to the organizational structure of the food service unit, quality management, employee training and safety programs.  
*Prerequisite:* CN 5332

**CN 5390 NUTRITION RESEARCH**  
3 SEMESTER HOURS  
This course meets the research requirement for the Master of Clinical Nutrition. In this course, students complete one of three types of research projects: 1) a clinical study, usually in conjunction with a larger, on-going research study; 2) an evidence-based review of literature that results in recommendations for clinical practice; or 3) a clinical outcomes study. The research may be completed individually or by a small group of students.  
*Prerequisite:* HCS 5330

**CN 5452 ACUTE-CARE MEDICAL NUTRITION THERAPY PRACTICUM**  
4 SEMESTER HOURS  
The student provides evidence-based medical nutrition therapy to clients with renal disease, cancer, traumatic injuries and other complex medical problems.  
*Prerequisite:* CN 5351; concurrent enrollment in CN 5312

**CN 5954 INTEGRATED NUTRITION PRACTICUM**  
9 SEMESTER HOURS  
Students integrate knowledge and skill in medical nutrition therapy and management in applying the nutrition-care process to care of clients with complex medical and social histories. Students apply management skills in team communication, reimbursement procedures and quality improvement. The practicum includes a block in which students function independently in patient care and one in which they gain insights into applied research in clinical nutrition.  
*Prerequisite:* CN 5313, CN 5351, CN 5360, CN 5370