Clinical Skills III
Summer. 1(1-2) RB: (HM 532) R: Graduate-professional students in College of Human Medicine.

Age specific screening examinations and integration with data-gathering skills.

Clinical Skills IV
Fall. 2(1-2) RB: (HM 533) R: Open only to graduate-professional students in College of Human Medicine.

Advanced interviewing and physical examination skills. Communication of patient-related data with the patient and other health professionals, orally and in writing. Problem solving.

Clinical Skills V
Spring. Summer. 2(1-2) RB: (HM 535) R: Open only to graduate-professional students in College of Human Medicine.

Advanced interviewing and physical examination skills. Oral case presentations and written medical records. Introductory problem solving skills.

Comprehensive Domain
Spring. 2 credits. R: Not open to first year students. Open only to graduate-professional students in College of Human Medicine.

Basic sciences applied to clinically relevant situations. Problem-based small group experiences.

Topics in Reproductive Health
Fall. 1(1-0) R: Open only to graduate-professional students in College of Human Medicine.

Learn/apply advanced concepts of the basic sciences to clinically relevant situations. Done in integrated, problem-based small group experiences and other experiences.

Human Development and Behavior in Society
Summer. 5(4-2) R: Graduate-professional students in College of Human Medicine.

Social science basis of medicine including social and cultural influences on health and behavior. Overview of normal growth and development throughout the life span.

The Social Context of Clinical Decisions
Fall. 2(2-0) RB: Completion of Block I requirements. R: Open only to graduate-professional students in College of Human Medicine.

Social perspectives on medicine and medical care.

The Social Context of Clinical Decisions II
Spring. 2(2-0) RB: (HM 546) R: Open only to graduate-professional students in College of Human Medicine.

Issues and concepts related to social and professional responsibilities of physicians.

Medical Humanities Seminar
Spring. 2(2-0) RB: (HM 547) R: Open only to graduate-professional students in College of Human Medicine.

Issues related to the humanities and human values pertinent to medical practice.

Integrative Clinical Correlations I
Fall. 2(2-0) RB: (ANT 551 or concurrently and BMB 521 or concurrently and PSL 501 or concurrently) R: Graduate-professional students in College of Human Medicine.

Correlation of the principles of the basic biological and behavioral sciences with disciplines of clinical medicine using case presentations.

Integrative Clinical Correlations II
Spring. 2(2-0) RB: (HM 571 or concurrently and ANT 552 or concurrently and ANT 562 or concurrently and MMG 552 or concurrently and PTH 542 or concurrently) R: Graduate-professional students in College of Human Medicine.

Correlation of the principles of the basic biological and behavioral sciences within the disciplines of clinical medicine using case presentations.

Integrative Clinical Correlations III
Summer. 1(2-0) RB: (HM 543 or concurrently and HM 572 or concurrently and PHD 523 or concurrently and PHM 563 or concurrently and RAD 553 or concurrently) R: Graduate-professional students in College of Human Medicine.

Correlation of the principles of the basic biological and behavioral sciences with the disciplines of clinical medicine using case presentations.

Mentor Program
Fall, Spring, Summer. 1(0-0) R: A student may earn a maximum of 3 credits in all enrollments for this course. R: Graduate-professional students in College of Human Medicine.

Dimensions of being a physician: skills needed to perform the job with patients and other medical workers. Current trends in the fields.

Special Problems in Human Medicine
Fall, Spring, Summer. 1 to 34 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Graduate-professional students in College of Human Medicine.

Work under the direction of a faculty member on an experimental, theoretical, or applied problem that requires a broad, interdisciplinary approach.

Comprehensive Care Clerkship
Fall, Spring, Summer. 4 to 20 credits. A student may earn a maximum of 20 credits in all enrollments for this course. R: Graduate-professional students in College of Human Medicine.

Comprehensive and longitudinal management of patients in ambulatory care settings.

Sub-Specialty Clerkships
Fall, Spring, Summer. 4 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Graduate-professional students in College of Human Medicine.

Hospital-and office-based clinical experiences in sub-specialties in medicine and surgery.

Emergency Medicine Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Graduate-professional students in College of Human Medicine.

Clinical diagnosis and treatment of emergencies seen in community emergency departments.

Core Competencies I
Fall. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Family Practice; Medicine; Pediatrics and Human Development. RB: (FMP 602) R: Open only to graduate-professional students in College of Human Medicine.

A weekly seminar addressing core knowledge and skills from an interdisciplinary perspective.

Core Competencies II
Spring. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Family Practice; Medicine. RB: (FMP 602) R: Open only to graduate-professional students in College of Human Medicine.

A weekly seminar addressing core knowledge and skills from an interdisciplinary perspective.

Core Competencies III
Spring, Summer. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Family Practice; Medicine; Obstetrics, Gynecology and Reproductive Biology; Pediatrics and Human Development; Surgery. RB: (FMP 602) R: Open only to graduate-professional students in College of Human Medicine.

A weekly seminar addressing core knowledge and skills from an interdisciplinary perspective.

Research Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (FMP 690) or approval of community research director. R: Open only to graduate-professional students in the College of Human Medicine.

Biological, behavioral, or clinical research project.

HUMAN NUTRITION
AND FOODS
HNF

Department of Food Science
and Human Nutrition
College of Agriculture and
Natural Resources
College of Human Ecology

Introduction to Human Nutrition
Fall, Spring, Summer. 3(3-0)

Nutrition needs in life stages from a human ecological perspective. Domestic and international factors affecting the availability of a safe, nutritious food supply. Relationships of food choices to health and disease.

Preview of Nutritional Sciences
Spring. 1(1-1) R: Open only to freshmen or sophomores.

Overview of nutritional sciences as a preparatotal major. Introduces students to faculty nutrition research projects, enables students to participate in a directed research experience, and exposes students to various career opportunities.
300 Experimental Approaches to Foods
Fall, Spring. 4(2-4) P:M: Completion of Tier I writing requirement. RB: (CEM 143) R: Open to only to juniors or seniors in the Department of Food Science and Human Nutrition.
Effects of preparation methods and ingredient substitutions on chemical and physical properties of food constituents. Effects of changes in chemical and physical properties on functional and sensory attributes of foods.

311 Principles of Human Nutrition
Spring. 3(3-0) RB: (BMB 200)
Identification, function and food sources of nutrients required by humans. Normal metabolism. Effects of deficiencies or excesses of specific nutrients on metabolism.

320 Basic Skills in Dietetic Practice
Spring, Summer. 3(2-2) P:M: (HNF 150 or HNF 311) R: Open to sophomores or juniors or seniors in the Dietetics, Nutritional Sciences or Food Science majors. SA: HNF 220
Nutrient composition of foods to meet nutritional needs for meal planning. Sources of reliable food and nutrition information. Evaluation and communication of scientific and consumer information. Concepts in nutritional epidemiology.

375 Community Nutrition
Fall, Summer. 3(3-0) RB: (HNF 150 or HNF 311)
A human ecological approach to dietary and anthropometric assessment of population groups and policies, programs and resources available to address community nutritional needs.

400 Art and Science of Food Preparation
Spring. 2(1-3) RB: (HNF 300 or concurrently) R: Open only to seniors in the Dietetics or Nutritional Sciences major or to graduate students in the Human Nutrition major.
Art and science of food preparation in relation to cost, health, and historical, regional, ethnic, and religious customs. Product evaluation using sensory techniques. Lecture offered full semester; laboratory offered half of semester.

406 Sociocultural Aspects of Food
Fall, Spring. 3(3-0) RB: ISS course or concurrently R: Open only to juniors or seniors.

410 Sensory Assessment of Foods
Spring. 2(1-2) RB: (HNF 300 or FSC 401) and (STT 200 or STT 201 or STT 315 or STT 421 or STT 464) R: Open only to majors in the Department of Food Science and Human Nutrition.
Discriminative, consumer and descriptive methods used to evoke, measure, analyze, and interpret sensory reactions to food characteristics.

440 Foodservice Operations
Fall. 4(4-0) RB: (HNF 150) R: Open only to juniors or seniors in the Dietetics or Nutritional Sciences major or to graduate students in the Human Nutrition major. SA: HNF 441
Principles, processes and control strategies in foodservice operations: menu planning, procurement, and on-premise storage and issuance. Purchasing, budgets, human resources, control management, ethics, marketing, production, safety and sanitation.

444 Computerized Foodservice Management Laboratory
Fall, Spring. 2(1-2) P:M: (HNF 440 or concurrently) R: Competency in computer spreadsheet applications. R: Open only to juniors or seniors in the Dietetics or Nutritional Sciences major or to graduate students in the Human Nutrition major.
Use of prototype management computer software for inventory management, recipe adjustment, recipe and menu precosting, nutrient analysis, cost analysis, accounting procedures, and other foodservice applications.

445 Foodservice Management Experience
Fall, Spring. 2 credits. P:M: (HNF 440 or concurrently) R: Open only to seniors in the Dietetics or Nutritional Sciences major or graduate students in the Human Nutrition major. Approval of department.

453 Nutrition and Human Development
Spring. 3(3-0) P:M: (HNF 150) and (PSL 250 or concurrently or PSL 431 or concurrently) R: Open only to seniors in the Dietetics or Nutritional Sciences major or graduate students in the Human Nutrition major. Approval of department.

461 Advanced Human Nutrition: Carbohydrates, Lipids and Proteins
Fall. 3(3-0) RB: (BMB 200 or BMB 401 or concurrently) and (PSL 250 or PSL 432) SA: HNF 460
Energetics and metabolism of carbohydrates, proteins, and lipids as related to dietary requirements and disease processes in humans. Recommended dietary allowances. Food sources of nutrients.

465 Nutritional Pathophysiology
Fall. 4(4-0) P:M: (HNF 461 or concurrently and ANT 316) SA: HNF 473
Effects of specific pathophysiological states on the function of target organs. Assessment of nutritional and medical status using laboratory tests. Putative mechanisms of action, efficacy, and safety of relevant alternative and complementary therapies will be addressed.

466 Medical Nutrition Therapy
Spring. 4(3-2) P:M: (HNF 461 and HNF 462 and HNF 465) R: Open to only to juniors or seniors. Approval of department.
Anatomical, physiological and biochemical changes associated with diseases. Nutritional assessment. Use of modified diets as adjuncts to other therapies.

467 Outcome Measurement and Documentation in Medical Nutrition Therapy
Spring. 1(0-2) P:M: (HNF 461 and HNF 462 and HNF 465) R: Senior dietetic majors. SA: HNF 379 C: HNF 466 concurrently.
Planning, implementation, outcome measurement, and documentation in medical nutrition therapy (MNT). Clinical, behavioral and functional outcomes resulting from interventions in clinical and outpatient settings.

474 Drug-Nutrient Interactions
Spring. 2(2-0) RB: (HNF 461 and HNF 462) R: Open to only to seniors in the Department of Food Science and Human Nutrition.
Reciprocal effects of foods, nutrients, and dietary constituents and pharmacologic agents. Drug-nutrient interactions in high risk groups including the elderly. Drug-nutrient counseling.

475 Community Nutrition Applications
Spring. 1(0-2) P:M: (HNF 375) R: Open to juniors or seniors.
Practice and evaluation of dietary and anthropometric nutritional assessment. Apply communication, advocacy and problem solving skills by identifying and addressing the nutrition needs and wants of a target population.

480 Concepts of Human Nutrition Research Methods
Spring. 2(1-3) P:M: (BM 401 and PSL 432) and completion of Tier I writing requirement. RB: (HNF 311 or HNF 461 or HNF 462 or FSC 455) R: Open only to seniors or graduate students in the Department of Food Science and Human Nutrition. Approval of department.
Issues and techniques involved in nutrition research with humans and animals. Guided laboratory experience plus independent project.

490 Independent Study
Fall, Spring. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Open only to juniors or seniors. Approval of department.
Individual study of selected topics in foods, foodservice management or nutrition.

490H Honors Independent Study
Fall, Spring. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Open to juniors or seniors. Approval of department.
Individual study of selected topics in foods, foodservice management or nutrition.
Human Nutrition and Foods—HNF

494 Practicum
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Open only to majors in the Department of Food Science and Human Nutrition. Approval of department.

Professional experience in selected settings and organizations under faculty supervision.

807 Advanced Food Toxicology
Fall of even years. 3(3-0) Interdepartmental with Food Science; Animal Science. Administered by Department of Food Science and Human Nutrition. R: Approval of department.

Toxicology related to food safety. Metabolism of toxins as influenced by food constituents, mutagenesis, and chemical carcinogenesis. Risk assessment.

811 Integrated Nutrient Metabolism
Fall of odd years. 3(3-0) Interdepartmental with Animal Science. Administered by Department of Animal Science. RB: (BMB 201 or BMB 401) or approval of department.

Comparative physiology of the absorption and metabolism of carbohydrates, lipids, protein, minerals, and vitamins and their regulation and integration. Basis for applied nutrition of humans, livestock and companion animals.

840 Human Nutrition and Chronic Diseases
Fall of odd years. 3(3-0) Interdepartmental with Animal Science.

Dietary intervention and treatment of chronic diseases: obesity, cardiovascular disease, diabetes, gastrointestinal disorders and cancer.

843 Community Nutritional Assessment
Spring of odd years. 3(2-2)

Nutritional assessment of population groups in community settings. Interpretation of national and international health data.

890 Supervised Individual Study
Fall, Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Food Science and Human Nutrition. Students are limited to a combined total of 10 credits in HNF 890 and HNF 894.

Faculty supervised study of nutrition areas of individual interest.

892 Nutrition Seminar
Fall, Spring. 1(1-0) A student may earn a maximum of 6 credits in all enrollments for this course. Presentations by students on current topics in nutrition.

894 Human Nutrition Practicum
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Food Science and Human Nutrition. Students are limited to a combined total of 10 credits in HNF 890 and HNF 894. Approval of department.

Experience in agencies or offices related to Human Nutrition. Field experience required.

899 Master's Thesis Research
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 20 credits in all enrollments for this course. R: Open only to masters students in Human Nutrition and Foods.

Master's thesis research.

935 Nutrition: Lipid and Carbohydrate Metabolism
Fall of even years. 3(3-0) Interdepartmental with Animal Science.

Regulatory aspects of lipid and carbohydrate metabolism as influenced by nutritional status.

936 Protein Nutrition and Metabolism
Spring of even years. 3(3-0) Interdepartmental with Animal Science. Administered by Department of Animal Science.


938 Nutrition: Metabolism and Function of Vitamins
Spring of odd years. 3(3-0) Interdepartmental with Animal Science.

Regulatory roles of vitamins at cellular and molecular levels.

999 Doctoral Dissertation Research
Fall, Spring. Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to doctoral students in Human Nutrition and Foods.

Doctoral dissertation research.

INFORMATION TECHNOLOGY MANAGEMENT

ITM

The Eli Broad College of Business and The Eli Broad Graduate School of Management

311 Systems Analysis and Design
Spring, 3(3-0) P.M.: (BUS 309) R: Open only to students in The Eli Broad College of Business.

Structured analysis and design of information systems. Use of computer aided software engineering tools. Consulting issues associated with the design and implementation of information systems.

414 Enterprise Resource Planning Systems
Spring, 3(3-0) P.M.: (ITM 311 and BUS 309) R: Open only to students in The Eli Broad College of Business.

Analysis, design and use of enterprise systems. Importance of enterprise system fit and re-engineering of the enterprise. Implementation risks and organizational returns. Use of enterprise software.

490 Independent Study in Information Technology
Fall, Spring, Summer. 1 to 4 credits. P.M.: (BUS 309) R: Open only to students in The Eli Broad College of Business.

Directed study in information technology under faculty supervision.

491 Special Topics in Information Technology
Fall, Spring. 1 to 4 credits. P.M.: (BUS 309) R: Open only to students in The Eli Broad College of Business.

Current topics in information technology.

821 Enterprise Database Systems
Fall. 3(3-0) Interdepartmental with Accounting. Administered by Department of Accounting and Information Systems. R: Open only to MBA students and MS in Professional Accounting students. Not open to students with credit in ACC 321.

Management of information in business organizations. Conceptual modeling of transaction processing systems, workflow systems, and enterprise-wide networks of value-added activities. Integration of decision support and policy level systems with economic event processing systems. Information system implementation.

822 Analysis and Design of Enterprise Systems
Fall. 3(3-0) Interdepartmental with Accounting. Administered by Department of Accounting and Information Systems. P.M.: (ACC 321 or MBA 823) R: Open only to MBA students and Master of Science students in Professional Accounting or approval of department.

Structured analysis and design of enterprise information systems. Use of computer-aided software design tools. Consulting issues associated with the design and implementation of information systems.

823 Advanced Enterprise Database Systems
Fall. 3(3-0) Interdepartmental with Accounting. Administered by Department of Accounting and Information Systems. P.M.: (ACC 321 or ACC 821 or ITM 821) R: Open only to MBA students and Master of Science students in Professional Accounting or approval of department.


824 Business Data Communications
Spring. 3(3-0) Interdepartmental with Accounting. Administered by Department of Accounting and Information Systems. P.M.: (MBA 823 or ACC 321) R: Open only to MBA students and Master of Science students in Professional Accounting or approval of department.


825 Object Oriented Business Information Systems
Spring. 3(3-0) Interdepartmental with Accounting. Administered by Department of Accounting and Information Systems. P.M.: (ACC 823 or ITM 823) R: Open only to MBA students and Master of Science students in Professional Accounting or approval of department.