

# STUDY OUTLINE

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The Commission on Dietetic Registration developed this study outline to help you prepare for the Registration Examination for Dietitians. The study outline corresponds directly to the content outline (test specifications). Since the content outline uses the language of the 2005 Dietetics Practice Audit, a more user-friendly study outline was prepared for you. The content outline describes activities performed by dietitians. This study outline illustrates the knowledge needed to perform those activities. It is not all-encompassing of dietetics practice. Each content domain has been outlined following a topical format that should help you identify the specific content areas included on the examination.

Accompanying this outline are two reference lists—one covering domains I, II, and III, and another for domains IV and V. The lists do not attempt to include all acceptable sources of dietetics information, and the questions on the Registration Examination for Dietitians are not necessarily based on this selection of references.

## **DOMAIN I - FOOD AND NUTRITION SCIENCES (12%)**

### **TOPIC A - Food Science and Composition of Foods**

1. Food science
  - a. Physical and chemical properties of food
    - (1) Meats, fish, poultry, meat alternatives
    - (2) Eggs
    - (3) Milk and dairy products
    - (4) Flour and cereals
    - (5) Vegetables and fruits
    - (6) Fats and oils
    - (7) Functional foods
  - b. Scientific basis for preparation and storage
    - (1) Function of ingredients
    - (2) Effects of techniques and methods on
      - (a) aesthetic properties
      - (b) nutrient retention
    - (3) Roles of food additives
2. Composition of food
  - a. Sources of data
  - b. Macro and micronutrients sources
  - c. Phytochemicals

### **TOPIC B - Nutrition and Supporting Sciences**

1. Principles of normal nutrition
  - a. Function of nutrients
  - b. Nutrient and energy needs throughout the life span
  - c. Herbals, botanicals, and supplements
2. Principles of physiology and biochemistry as related to nutrition
  - a. Ingestion
  - b. Digestion
  - c. Absorption

- d. Metabolism, regulation
- e. Excretion

**DOMAIN II – NUTRITION CARE PROCESS AND MODEL –  
COMPLEX CONDITIONS (40%)**

**TOPIC A - Nutrition Screening and Assessment**

1. Nutrition screening
  - a. Purpose
  - b. Selection and use of risk factors
  - c. Parameters and limitations
  - d. Methodology
  - e. Participation in interdisciplinary nutrition screening teams
2. Nutrition assessment of individuals
  - a. Dietary intake assessment, analysis and documentation
  - b. Medical and family history
  - c. Physical findings
    - (1) Anthropometric data
    - (2) Nutrition focused physical exam
  - d. Medication management
    - (1) Prescription and over-the-counter medications
    - (2) Medication/food interactions
  - e. Diagnostic tests, procedures, evaluations
    - (1) Assessment of energy requirements
    - (2) Biochemical analyses
  - f. Physical activity habits and restrictions
  - g. Economic/social
    - (1) Psychosocial and behavioral factors
    - (2) Socioeconomic factors
    - (3) Functional factors
3. Nutrition Assessment of Populations
  - a. Community and group nutrition status indicators
    - (1) Demographic data
    - (2) Incidence and prevalence of nutrition-related status indicators
    - (3) Prevalence of food insecurity
  - b. Development and maintenance of nutrition screening and surveillance systems
    - (1) National, state and local reference data (e.g., NHANES, BRFSS, YRBSS, Nutrition Screening Initiative, Pediatric and Pregnancy Nutrition Surveillance Systems, etc)
  - c. Availability of community resources
    - (1) Food and nutrition assistance programs
    - (2) Consumer education resources
    - (3) Health services
    - (4) Studies on food systems, local marketplace, food economics
    - (5) Public health programs

**TOPIC B – Nutrition Diagnosis**

1. Relationship between nutrition diagnoses and medical diagnoses
  - a. Pathophysiology
  - b. Identifying medical diagnoses affecting nutrition care
  - c. Determining nutrition risk factors for current medical diagnoses
  - d. Distinguishing nutrition diagnoses vs. medical diagnoses
2. Data sources and tools for nutrition diagnosis
  - a. Organizing assessment data
  - b. Using standardized language
3. Problem definition (Diagnostic labels)
  - a. Using nutrition diagnostic labels
  - b. Determining nutrition problem domains
    - (1) Intake
    - (2) Clinical
    - (3) Behavioral - Environmental
4. Etiologies (Cause / contributing risk factors)
  - a. Identifying underlying causes and contributing risk factors of nutrition diagnoses
  - b. Making cause and effect linkages
5. Signs and symptoms (Defining characteristics)
  - a. Linking signs and symptoms to etiologies
  - b. Using subjective (symptoms) and/or objective (signs) data
6. Critical thinking skills
  - a. Making inferences
  - b. Prioritizing
  - c. Differential diagnosing
7. Documentation
  - a. Developing nutrition diagnostic statements (PES statements)

### **TOPIC C – Nutrition Intervention**

1. Nutrition care for health promotion and disease prevention for individuals
  - a. Identification of desired outcomes/actions
    - (1) Scientific basis for nutrition intervention – evidence based practice
    - (2) Evaluation of nutrition information
    - (3) Food fad
    - (4) Health fraud
  - b. Determination of energy/nutrient needs specific to life span stage
  - c. Implementing care plans
    - (1) Nutrition recommendations to promote wellness
    - (2) Communication and documentation
2. Medical Nutrition Therapy for individuals
  - a. Identify desired outcomes and actions
  - b. Relationship of physiology and pathology to treatment of primary nutrition related disorders
    - (1) Critical care and hypermetabolic states
    - (2) Eating disorders
    - (3) Food allergies and intolerance
    - (4) Immune system disorders, infections, and fevers
    - (5) Malnutrition: protein, calorie, vitamin, mineral
    - (6) Metabolic, endocrine, and inborn errors of metabolism
    - (7) Oncologic and hematologic conditions
    - (8) Organ system dysfunction
    - (9) Orthopedic/wounds

- c. Determine energy/nutrient needs specific to condition
  - d. Determine specific feeding needs
    - (1) Oral
      - (a) Composition / texture of foods
      - (b) Diet patterns/schedules; Diagnostic test meals
      - (c) Modified diet products and food supplements
      - (d) Adaptive equipment
    - (2) Enteral and Parenteral Nutrition
      - (a) Formulas and calculations
      - (b) Routes, techniques, equipment
      - (c) Complications
    - (3) Complementary care, herbal therapy
  - e. Implementing care plans
    - (1) Nutrition therapy for specific nutrition-related problems
    - (2) Basis for quality practice (evidence-based guidelines, standardized process (NCP), regulatory and patient safety issues)
    - (3) Communication and documentation
    - (4) Discharge planning and disease management
3. Implementation and Promotion of National Dietary Guidance for populations (e.g. My Pyramid, Dietary Guidelines for Americans, etc)
    - a. Legislation and policy development
    - b. State and community resources and nutrition related programs
      - (1) Block grants to states
      - (2) Federal and state funded food and nutrition programs
      - (3) Social marketing
      - (4) Community interventions (e.g. STEPS grants)
      - (5) Sustainable food and agriculture systems
  4. Development of nutrition programs and services for populations
    - a. Identification and attainment of funding
    - b. Resource allocation and budget development
    - c. Provision of food and nutrition services to high risk groups

#### **TOPIC D – Nutrition Monitoring and Evaluation**

1. Monitoring progress and updating previous care
  - a. Monitoring responses to nutrition care
  - b. Comparing outcomes to nutrition interventions
2. Measuring outcome indicators
  - a. Using ADA evidence based guides for practice
3. Evaluating outcomes
  - a. Direct nutrition outcomes
  - b. Clinical and health status outcomes
  - c. Patient centered outcomes - improving customer satisfaction
  - d. Health care utilization outcomes
4. Relationship with outcomes measurement systems and quality improvement
5. Determining continuation of care
  - a. Continuing and updating care
  - b. Discontinuing care
6. Critical thinking
  - a. Explaining variance
  - b. Using reference standards
  - c. Selecting indicators

7. Documentation

**DOMAIN III – COUNSELING, COMMUNICATION, EDUCATION AND RESEARCH (10%)**

**TOPIC A - Assessment and Planning**

1. Components of the educational-plan
  - a. Targeted setting/clientele
    - (1) In-service education (students, health and rehabilitative service providers)
    - (2) Patient/client counseling
    - (3) Other (e.g., on-the-job training)
  - b. Goals and objectives
  - c. Needs assessment (external constraints, competing programs, illness)
    - (1) Individual
    - (2) Group
  - d. Content: community resources, learning activities/methodology, references and handouts; audiovisual specifications
  - e. Evaluation criteria
  - f. Budget development
  - g. Program promotion
2. Educational readiness assessment
  - a. Motivational level and readiness to change
  - b. Educational level
  - c. Situational: environmental, economical, cultural

**TOPIC B – Implementation and Evaluation**

1. Implementation
  - a. Communication
    - (1) Interpersonal
    - (2) Group process
  - b. Interviewing
    - (1) Techniques of questioning: open-ended, closed, leading
  - c. Counseling
    - (1) Techniques: motivational, behaviorial, other
  - d. Methods of communication
    - (1) Verbal/non-verbal
    - (2) Written
    - (3) Media
    - (4) Technology
2. Evaluation of educational outcomes
  - a. Measurement of learning
    - (1) Formative
    - (2) Summative
  - b. Evaluation of effectiveness of educational plan
3. Documentation

**TOPIC C - Research**

1. Types of research and research design
2. Statistical evaluation, interpretation and application

## **DOMAIN IV – FOODSERVICE SYSTEMS (17%)**

### **TOPIC A - Menu Planning**

1. Types of menus
  - a. Patient/resident
    - (1) Select/non-select
    - (2) Restaurant
    - (3) Room service
  - b. Commercial
  - c. Non-commercial
2. Menu development
  - a. Master menu
    - (1) Concepts and development
    - (2) Use (manual and automated systems)
  - b. Guidelines and parameters
    - (1) Aesthetics
    - (2) Nutritional adequacy
    - (3) Cost
    - (4) Regulations
  - c. Modifications
    - (1) Diet/disease states
    - (2) Substitutions
    - (3) Nutritional adequacy
    - (4) Allergies and food sensitivities
  - d. Clients
    - (1) Age/life cycle stage
    - (2) Cultural/religious influence
    - (3) Vegetarian
    - (4) Satisfaction measurement
      - (a) Customer evaluation
      - (b) Sales data
  - e. Operational influences
    - (1) Equipment
    - (2) Labor
    - (3) Budget
  - f. External influences
    - (1) Trends
    - (2) Seasonal
    - (3) Disaster
    - (4) Product Availability

### **TOPIC B - Procurement, Production, Distribution, and Service**

1. Procurement, receiving, and inventory management
  - a. Procurement principles, concepts, and methods
    - (1) Bidding
    - (2) Specification development

- (3) Group purchasing/prime vendor
    - (4) Ethics
  - b. Procurement decisions
    - (1) Product selection/yield
    - (2) Forecasting
    - (3) Product Packaging – waste reduction and storage
    - (4) Cost analysis
    - (5) Vendor performance and evaluation
  - c. Receiving and storage
    - (1) Equipment and methods
    - (2) Records
    - (3) Security
  - d. Inventory management
    - (1) Control procedures – par levels, rotation, minimum/maximum
    - (2) Issuing procedures
- 2. Principles of quantity food preparation and processing
  - a. Cooking methods
  - b. Equipment
  - c. Preservation and packaging methods
  - d. Modified diets
- 3. Food production control procedures
  - a. Standardized recipes
  - b. Ingredient control
  - c. Portion control and yield analysis
  - d. Forecasting production
  - e. Production scheduling
- 4. Production systems
  - a. Conventional
  - b. Commissary
  - c. Ready prepared
  - d. Assembly serve
  - e. Cook – Chill
  - f. Display cooking
- 5. Distribution and Service
  - a. Type of service systems
    - (1) Centralized
    - (2) Decentralized
  - b. Equipment
  - c. Populations served

### **TOPIC C - Sanitation and Safety**

- 1. Sanitation and food safety
  - a. Principles
    - (1) Contamination and spoilage
    - (2) Factors affecting bacterial growth
    - (3) Signs and symptoms of food borne illness
  - b. Sanitation practices and infection control
    - (1) Personal hygiene
    - (2) Food and equipment
    - (3) Food storage
    - (4) Temperature control

- (5) Food handling techniques
- c. Regulations (government and other agencies)
- d. Food quality and safety
  - (1) Temperature
  - (2) Additives
  - (3) Documentation and record keeping
  - (4) HACCP
  - (5) Recalls
  - (6) Operational emergencies
  - (7) Bioterrorism
- 2. Safety
  - a. Employee safety
    - (1) Universal precautions
    - (2) Equipment use and maintenance
    - (3) Personal work habits
  - b. Safety practices
    - (1) Working conditions
    - (2) Regulations
    - (3) Fire safety
    - (4) Accident prevention
  - g. Safety documentation and record keeping

#### **TOPIC D - Facility Planning**

- 1. Facility layout
  - a. Planning consideration for equipment and layout
    - (1) Menu production and service system
    - (2) Safety and sanitation
    - (3) Privacy/accessibility
    - (4) Codes and standards
    - (5) Fiscal aspects
  - b. Planning team
    - (1) Composition
    - (2) Roles
    - (3) Responsibilities
- 2. Equipment specifications and selection

#### **DOMAIN V - MANAGEMENT (21%)**

##### **TOPIC A - Human Resources**

- 1. Recruitment and selection
  - a. Laws and regulations
  - b. Job analysis, specifications, descriptions
  - c. Performance standards
  - d. Candidate interviews
  - e. Orientation and training
  - f. Diversity
- 2. Employment process and procedures
  - a. Personnel information
    - (1) Records
    - (2) Confidentiality

- b. Unions/contracts
- c. Disciplinary action
- d. Grievances
- e. Performance management
- f. Retention strategies
- g. Compensation

## **TOPIC B - Finance and Materials**

1. Budget development/resource allocation
  - a. Budget procedures
  - b. Types
    - (1) Operational
    - (2) Capital
    - (3) Other
  - c. Methods
    - (1) Incremental
    - (2) Performance
    - (3) Zero-based
    - (4) Other
  - d. Components
    - (1) Direct costs
    - (2) Indirect costs
    - (3) Capital expenditures
    - (4) Profit margin
    - (5) Revenue
  - e. Resources allocation
    - (1) Fiscal/materials
    - (2) Cost control mechanisms (e.g., purchase specifications, negotiating contracts)
    - (3) Factors affecting available resources (e.g., DRGs)
2. Financial status: monitoring, evaluation, and control
  - a. Monitoring
    - (1) Accounting procedures
    - (2) Reports
  - b. Budget effectiveness
    - (1) Financial statements
    - (2) Profit and loss statements
    - (3) Value analysis
    - (4) Cost/benefit analysis
    - (5) Productivity studies (quantitative)
  - c. Cash accounting procedures

## **TOPIC C - Marketing Products and Services**

1. Marketing analysis and strategies
  - a. Process
    - (1) Identification of target market
    - (2) Determination of needs/wants
    - (3) Marketing mix
    - (4) Customer satisfaction
  - b. Strategies

- (1) Product
    - (2) Place
    - (3) Price
    - (4) Promotion
  - c. Documentation and evaluation
- 2. Pricing strategies
  - a. Breakeven
  - b. Revenue-generating
  - c. Loss leader
  - d. Other

#### **Topic D - Functions and Characteristics**

- 1. Management Functions
  - a. Planning
    - (1) Short and long range
    - (2) Strategic and operational
    - (3) Policies and procedures
    - (4) Disaster planning
  - b. Organizing
    - (1) Work scheduling
    - (2) Structure/design, department/unit
    - (3) Workload, productivity, and FTE requirements
    - (4) Establishing priorities
    - (5) Tasks/activities and action plans
    - (6) Resources
  - c. Directing
    - (1) Coordination
    - (2) Delegation
    - (3) Communication
    - (4) Motivation strategies
    - (5) Leadership styles, skills, techniques
    - (6) Management approaches
  - d. Controlling
  - e. Evaluating
- 2. Management Characteristics
  - a. Skills
    - (1) Technical
    - (2) Human/managing diverse workforce
    - (3) Conceptual
  - b. Roles
    - (1) Informational
    - (2) Conflict resolution
    - (3) Problem-solving
    - (4) Decision-making
    - (5) Other
  - c. Traits
    - (1) Interpersonal communications
    - (2) Use of authority, influence, and power
    - (3) Ethical practice
    - (4) Other
- 3. Professional standards of practice

- a. *Standards of Practice in Nutrition Care*
- b. *Standards of Professional Performance*
- c. Legislative process

**TOPIC E - Quality Improvement**

- 1. Regulatory guidelines (e.g., federal, JCAHO, other)
- 2. Process and implementation
  - a. Identification of problems
  - b. Plans
  - c. Standards/criteria (indicators)
  - d. Collection of data and monitoring
  - e. Evaluation of effectiveness
  - f. Implementation of corrective action
  - g. Report
- 3. Outcomes Management Systems