STUDY OUTLINE

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). Because the content outline uses the language of the 2010 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 and II, and another for domains III and IV. 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 - PRINCIPLES OF DIETETICS - (12%)

TOPIC A - Food Science and Nutrient 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, labels
   b. Macro and micronutrients sources
   c. Phytochemicals
   d. Nutrient databases

TOPIC B - Nutrition and Supporting Sciences

1. Principles of normal nutrition
   a. Function of nutrients and non-nutritive substances
   b. Nutrient and energy needs throughout the life span
   c. Herbals, botanicals, and supplements

2. Principles of normal human anatomy, physiology, and biochemistry
   a. Gastrointestinal
TOPIC C – Education and Communication

1. Components of the educational-plan
a. Targeted setting/clientele
   (1) Cultural competencies and diversity
   (2) In-service education (students, health and rehabilitative service providers)
   (3) Patient/client counseling
   (4) Other (e.g., on-the-job training, telemedicine/telhealth, e-learning)
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. Theories of educational readiness

3. Implementation
a. Communication
   (1) Interpersonal
   (2) Group process
b. Interviewing
   (1) Techniques of questioning: open-ended, closed, leading
c. Counseling
   (1) Techniques: motivational, behavioral, and other
d. Methods of communication
   (1) Verbal/non-verbal
   (2) Written
   (3) Media (e.g., print, electronic, social media)
   (4) Technology (e.g., informatics)

4. Evaluation of educational outcomes
a. Measurement of learning
   (1) Formative
   (2) Summative
b. Evaluation of effectiveness of educational plan

5. Client Information
a. Records
b. Confidentiality
6. Documentation
7. Orientation and training

**TOPIC D - Research**

1. Types of research and research design
2. Statistical evaluation, interpretation and application
3. Evidence-based research

**TOPIC E - Management Concepts**

1. Forecasting
2. Marketing strategies
   (1) Product
   (2) Place
   (3) Price
   (4) Promotion
3. Planning
4. Organizing
5. Directing
6. Controlling
7. Evaluating

**DOMAIN II – NUTRITION CARE FOR INDIVIDUALS AND GROUPS – (50%)**

**TOPIC A - Screening and Assessment**

1. Nutrition screening
   a. Purpose
   b. Selection and use of risk factors and evidence-based tools
   c. Parameters and limitations
   d. Methodology
   e. Participation in interdisciplinary nutrition screening teams
   f. Cultural competence
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

h. Educational readiness assessment
(1) Motivational level and readiness to change
(2) Educational level
(3) Situational: environmental, economical, and cultural

3. Nutrition Assessment of Populations and Community Needs Assessment
   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)
   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 – 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. Determining nutrition factors for groups

2. Data sources and tools for nutrition diagnosis
   a. Organizing assessment data
   b. Using standardized language

3. Diagnosing nutrition problems for individuals and groups
   a. Making inferences
   b. Prioritizing
   c. Differential diagnosing

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. Documentation

**TOPIC C – Planning and Intervention**

1. Nutrition care for health promotion and disease prevention
   a. Identification of desired outcomes/actions
      (1) Evidence-based practice for nutrition intervention
      (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
   a. Identify desired outcomes and actions
   b. Relationship of pathophysiology to treatment of 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
   c. 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) Counseling
      (4) Communication and documentation
      (5) Discharge planning and disease management

3. Implementation and Promotion of National Dietary Guidance (e.g., MyPlate, Dietary
   Guidelines for Americans)
   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) Community interventions

4. Development of programs and services
   a. Identification and attainment of funding
   b. Resource allocation and budget development
   c. Provision of food and nutrition services to groups

TOPIC D – 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 using evidence-based guides for practice
   a. Explaining variance
   b. Using reference standards
   c. Selecting indicators
3. Evaluating outcomes
   a. Direct nutrition outcomes
   b. Clinical and health status outcomes
   c. Patient-centered outcomes
   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. Documentation

DOMAIN III – MANAGEMENT OF FOOD AND NUTRITION PROGRAMS AND SERVICES - (21%)

TOPIC A – Functions of Management

1. 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, simplification, 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
      a. Evaluating

2. Characteristics
   a. Skills
      (1) Technical
      (2) Human/managing diverse workforce
      (3) Conceptual
   b. Roles
      (1) Informational
      (2) Conflict resolution
3. Professional standards of practice
   a. Standards of Practice in Nutrition Care
   b. Standards of Professional Performance
   c. Legislative process

**TOPIC B - Human Resources**

1. Recruitment and selection
   a. Laws and regulations
   b. Job analysis, specifications, and descriptions
   c. Performance standards
   d. Candidate recruitment
   e. Candidate screening
   f. Candidate interviewing

2. Employment process and procedures
   a. Personnel information
      (1) Records
      (2) Confidentiality
   b. Unions/contracts
   c. Disciplinary action
   d. Grievances
   e. Performance evaluation
   f. Retention strategies
   g. Compensation

**TOPIC C – Financial Management**

1. Budget development/resource allocation for food and nutrition programs and services
   a. Budget procedures
   b. Types
      (1) Operational
      (2) Capital
   c. Methods
      (1) Incremental
      (2) Performance
      (3) Zero–based
      (4) Flexible
      (5) Fixed
   d. Components
      (1) Direct expenses
      (2) Indirect expenses
      (3) Capital expenses
      (4) Profit margin
      (5) Revenue
e. Resources allocation
   (1) Financial and materials
   (2) Cost control decisions
   (3) Factors affecting available resources
2. Financial monitoring, evaluation, and control
   a. Accounting procedures
      (1) Cash/credit procedures
   b. Financial statements
      (1) Profit and loss statements
   c. Value analysis

TOPIC D - Marketing and Public Relations
1. Marketing analysis
   a. Process
      (1) Identification of target market
      (2) Determination of needs/wants
      (3) Marketing mix
      (4) Customer satisfaction
      (5) Documentation and evaluation
2. Pricing
   a. Strategies
      (1) Breakeven
      (2) Revenue-generating
      (3) Loss leader
   b. Rationale
3. Public relations
   a. Media relations
   b. Social networking
   c. Campaign development

TOPIC E - Quality Improvement
1. Regulatory guidelines (e.g., federal, local, TJC)
2. Process, implementation, evaluation
   a. Cost/benefit analysis
   b. Productivity studies
3. Outcomes management systems
4. Vendor performance and evaluation

DOMAIN IV – FOODSERVICE SYSTEMS (17%)

TOPIC A - Menu Development
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
      (2) Development
   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) Product Packaging
      (3) Cost analysis
   c. Receiving and storage
      (1) Equipment and methods
      (2) Records
      (3) Security
   d. Inventory management
      (1) Control procedures – par levels, rotation, minimum and 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/packaging

**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 safety
      (1) Time and temperature control
      (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) Environmental conditions
   (2) Regulations
   (3) Fire safety
   (4) Accident prevention

   c. Safety documentation and record keeping

   TOPIC D – Equipment and Facility Planning

   1. Facility layout
      a. Equipment and layout planning
         (1) Menu
         (2) Service system
         (3) Safety and sanitation
         (4) Privacy/accessibility
         (5) Codes and standards
         (6) Fiscal aspects
      b. Planning team
         (1) Composition
         (2) Roles
         (3) Responsibilities

   2. Equipment specifications and selection

   TOPIC E – Sustainability

   1. Food and water
   2. Non-food
      a. Supplies
      b. Equipment
   3. Waste management
      a. Storage
      b. Reduction
      c. Disposal

* Please note that although nutrition-related conditions; e.g., diabetes, renal disease, and weight management, are not specified in Domain II, the nutrition care process questions assess the candidates' knowledge and skills related to all examination nutrition-related conditions. This approach was taken to streamline the study outline with the introduction of the nutrition care process.
REFERENCES

The following references have been consolidated and arranged into two groups: Food and Nutrition Services, and Foodservice Systems/Management. The Food and Nutrition Services references relate directly to domains I and II. The Foodservice Systems/Management references relate directly to domains III and IV. Examination candidates may use other, equivalent sources for review.

Food and Nutrition Services


Nelson EC; Batalden, PB and Lazar, JS. *Practice-Based Learning and Improvement Clinical Improvement Action Guide.* 2nd ed. Oak Brook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations; 2007.


Foodservice Systems/Management


Joint Commission on Accreditation of Healthcare Organizations. 2010 Hospital Accreditation Standards (HAS). Oakbrook, IL: Joint Commission on Accreditation of Healthcare Organizations; 2009.


King, K. The Entrepreneurial Nutritionist. 4th ed. Dallas, TX: Kathy King Helm Publishing; 2009.


Additional / Optional Resources: Web Site References

American Diabetes Association
http://www.diabetes.org

American Dietetic Association
Evidence Analysis Library (EAL)
(subscription required)
http://www.eatright.org

American Dietetic Association
Nutrition Care Manual (NCM)
(subscription required)
http://www.eatright.org

American Dietetic Association
Pediatric Nutrition Care Manual (PNCM)
(subscription required)
http://www.eatright.org

American Heart Association
http://www.americanheart.org

American Society for Parenteral and Enteral Nutrition (ASPEN)
http://www.nutritioncare.org

Center for Disease Control (CDC)
http://www.cdc.gov

Health and Human Services (HHS)
http://www.hhs.gov

National Heart, Lung and Blood Institute (NHLB)
http://www.nhlbi.nih.gov

National Institute for Health (NIH)
http://www.nih.gov

US Department of Agriculture (USDA)
http://www.usda.gov/wps/portal/usdahome

US Food and Drug Administration
http://www.fns.usda.gov/fns/

USDA National Nutrient Database
http://www.ars.usda.gov/services/docs.htm?docid=9673