

**REGISTRATION EXAMINATION FOR DIETITIANS**  
**STUDY OUTLINE – 2022-2026**  
**Effective January 1, 2022**

Approved 9/26/2020

**DOMAIN I – PRINCIPLES OF DIETETICS (21%)**

**TOPIC A – Food, Nutrition and Supporting Sciences**

1. Food science
  - a. Physical and chemical properties of food
    - (1) Water
    - (2) Vegetables and fruits
    - (3) Sugars
    - (4) Flours, grains, and cereals
    - (5) Milk and dairy products
    - (6) Eggs
    - (7) Meats, fish, poultry, meat alternatives
    - (8) Fats and oils
    - (9) Beverages
    - (10) Functional foods
    - (11) Sensory evaluation of food
    - (12) Food safety, processing, preservation, and packaging
    - (13) Food biotechnology and genetic engineering
  - b. Scientific basis for preparation and storage
    - (1) Function of ingredients
    - (2) Techniques of food preparation
      - a) Leavening agents, batters, and doughs
    - (3) Effects of techniques and methods on
      - a) Sensory properties
      - b) Nutrient retention
    - (4) Roles of food additives
2. Composition of food
  - a. Labeling and packaging claims
  - b. Macro and micronutrients sources
  - c. Phytochemicals
  - d. Nutrient databases
  - e. Nutrient analysis
3. Principles of normal nutrition
  - a. Function of nutrients and non-nutritive substances
    - (1) Macro and micronutrients
    - (2) Water
    - (3) Fiber, prebiotics and probiotics
    - (4) Non-nutritive sweeteners and sugar alcohols
    - (5) Herbals, botanicals, and supplements
  - b. Nutrient and energy needs throughout the life span
  - c. Developmental stages and feeding patterns throughout the life span
4. Principles of human anatomy, physiology, microbiology, and biochemistry
  - a. Gastrointestinal

- b. Renal
  - c. Pulmonary
  - d. Cardiovascular
  - e. Neurological
  - f. Musculoskeletal
  - g. Reproductive
5. Social determinants of health (e.g., income, culture, social status, education, physical environment, social network, genetics, gender, race, and sexual orientation)
- a. Nutrition requirements for health promotion and disease prevention

## **TOPIC B – Education, Communication and Technology**

1. Components of the educational plan
  - a. Targeted setting/clientele
    - (1) Cultural competencies and diversity
    - (2) In-service education (e.g., students and health and rehabilitative service providers)
    - (3) Patient/client counseling
    - (4) Group/individual education
  - b. Goals and objectives (e.g., collaborate with partners and stakeholders)
  - c. Needs assessment (e.g., external constraints, competing programs, illness, and learning needs)
    - (1) Individual
    - (2) Group
  - d. Content (e.g., community resources, learning activities/methodology, references, handouts, and instructional materials)
  - e. Evaluation criteria
  - f. Budget development
  - g. Program promotion
2. Education Theories
  - a. Educational readiness
  - b. Human behavior and change management theory
3. Implementation
  - a. Communication
    - (1) Interpersonal
    - (2) Group process (e.g., interprofessional)
    - (3) Teach classes (e.g., culinary demonstrations and grocery tours)
  - b. Interviewing (e.g., techniques of questioning: open-ended, closed-ended, leading)
  - c. Counseling (e.g., techniques: motivation interviewing, behavioral, other)
  - d. Methods of communication
    - (1) Verbal/non-verbal
    - (2) Written (e.g., reports, grant proposals, other)
    - (3) Media (e.g., print, electronic, and social media)
4. Evaluation of educational outcomes
  - a. Measurement of learning
    - (1) Formative
    - (2) Summative
  - b. Evaluation of effectiveness of educational plan
  - c. Documentation

5. Client information
  - a. Records
  - b. Confidentiality
6. Healthcare and nutrition informatics systems/technologies
  - a. Telehealth and remote health monitoring systems
  - b. Electronic health records (e.g., meaningful use, privacy and protection for Protected Health Information (PHI), use for outcomes and use for National Consumer Panel (NCP))
  - c. Food and nutrient analysis software and databases
7. Public policy advocacy and legislation

### **TOPIC C – Research Applications**

1. Types of research
2. Research process (e.g., secure funding, hypothesis testing, study design, Institutional Review Board (IRB), statistical analysis, results, and discussion)
3. Data collection, analysis, interpretation, and outcomes to make decisions
4. Application of statistical analysis (e.g., analysis, interpretation, and integration of evidence-based research findings)
5. Presentation of research data and outcomes
6. Report research findings (e.g., write manuscripts, translation of results for diverse uses)
7. Use of grading systems (e.g., Evidence Analysis Library) and the application of evidence analysis as the basis for practice decisions.

## **DOMAIN II – NUTRITION CARE FOR INDIVIDUALS AND GROUPS (45%)**

### **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
  - g. Prioritize nutrition risk
2. Nutrition assessment of individuals
  - a. Dietary intake assessment, analysis, and documentation
  - b. Medical and family history
  - c. Obtain and assess physical findings
    - (1) Anthropometric data
    - (2) Nutrition-focused physical exam
    - (3) Intake and output
  - d. Medication management
    - (1) Prescriptions, over-the-counter medications, and supplements
    - (2) Medication/food/supplement interactions
  - e. Obtain and assess biochemical data, diagnostic tests, and procedures
  - f. Assessment of energy and nutrient requirements
  - g. Physical activity habits and restrictions
  - h. Comparative standards (e.g., energy requirements and growth)

- i. Economic/social
  - (1) Psychosocial and behavioral factors
  - (2) Socioeconomic factors
  - (3) Functional factors
- j. Educational readiness assessment
  - (1) Motivational level and readiness to change
  - (2) Educational level
  - (3) Situational (e.g., environmental, economic, and cultural)
- k. General wellness assessment
- 3. Nutrition assessment of populations and community needs assessment
  - a. Obtain and assess community and group nutrition status indicators
    - (1) Demographic data
    - (2) Incidence and prevalence of nutrition-related status indicator
    - (3) Prevalence of food insecurity
  - b. Review and utilize nutrition screening and surveillance systems (e.g., national, state, and local reference data, NHANES, BRFSS and 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 (e.g., cause/contributing risk factors)
  - a. Identifying underlying causes and contribution risk factors of nutrition diagnoses
  - b. Making cause and effect linkages
- 5. Signs and symptoms (e.g., 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 fads
- (4) Health fraud
- (5) Health and wellness promotion and risk reduction programs
- b. 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) Disordered eating and eating disorders
    - (3) Food allergies and intolerance
    - (4) Immune system disorders, infections, and fevers
    - (5) Malnutrition (e.g., protein, calorie, vitamin and mineral)
    - (6) Metabolic
    - (7) Endocrine
    - (8) Inborn errors of metabolism
    - (9) Oncologic and hematologic conditions
    - (10) Organ system dysfunction
      - a) Gastrointestinal
      - b) Renal
      - c) Pulmonary
      - d) Cardiovascular
      - e) Nervous system
      - f) Musculoskeletal
      - g) Reproductive
    - (11) Orthopedic
    - (12) Wounds
    - (13) Obesity
    - (14) Mental/Behavioral health and addiction
    - (15) Gastrointestinal and bariatric surgery
  - c. Determine energy/nutrient needs specific to condition
  - d. Determine specific feeding methods
    - (1) Oral
      - a) Composition/texture of foods and liquids
        - i. Chewing difficulty
        - ii. Swallowing difficulty (International Dysphagia Diet Standardization Initiative)
      - b) Diet patterns/schedules
      - c) Diet modification for diagnostic test
      - d) Modified diet products and food supplements
      - e) Adaptive equipment
      - f) Breastfeeding
    - (2) Enteral and Parenteral nutrition
      - a) Formulas and calculations

- b) Routes, techniques, equipment
    - c) Complications
  - (3) Integrative and functional care, herbal therapy
- e. Implementing care plans
  - (1) Nutrition therapy for specific nutrition-related problems
  - (2) Basis for quality practice (e.g., evidence-based guidelines, standardized processes – National Consumer Panel (NCP), regulatory and patient safety issues)
  - (3) Counseling and training (e.g., nutrition plans, medical devices and formula preparation)
  - (4) Communication and documentation
    - a) Patient rounds
    - b) Care conference
    - c) Coordination of care/interprofessional coordination
  - (5) Discharge planning
    - a) Recommend appropriate physical, social, behavioral or psychological services
    - b) Referral to community resources (e.g., WIC and home-delivered meals)
- 3. Implementation and promotion of national dietary guidance
  - a. MyPlate and other diet instructional tools
  - b. *Dietary Guidelines for Americans* and *Healthy People*
  - c. State and community resources and nutrition-related programs
    - (1) Block grants to states
    - (2) Federal and state funded food and nutrition programs
    - (3) Community-based 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 and determining tolerance to interventions (e.g., medications, tube feeding, parenteral nutrition, medical nutrition and dietary supplements)
- 2. Measuring outcome indicators using evidence-based guides for practice
  - a. Selecting indicators
  - b. Using reference standards
  - c. Explaining variance
- 3. Evaluating effectiveness and outcomes of nutrition interventions for individuals and populations
  - a. Direct nutrition intervention outcomes
  - b. Clinical and health status outcomes
  - c. Patient-centered outcomes
  - d. Resource utilization outcomes
- 4. Relationship with outcome measurement systems and quality improvement
- 5. Determining continuation and transition of care
  - a. Continuing and updating care
  - b. Discontinuing care

**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) Emergency preparedness
  - b. Organizing
    - (1) Schedules and FTE allocations
    - (2) Department or unit structure
    - (3) Processes, procedures, and improving productivity
    - (4) Resources
  - c. Directing
    - (1) Coordination
    - (2) Delegation
    - (3) Communication
    - (4) Motivation strategies
    - (5) Leadership theories
    - (6) Management theories
  - d. Controlling
    - (1) Establishing standards
    - (2) Monitoring established plans
    - (3) Developing corrective actions
  - e. Staffing
    - (1) Forecasting personnel needs
    - (2) Alignment of personnel
2. Management characteristics
  - a. Skills
    - (1) Technical
    - (2) Human
    - (3) Conceptual
  - b. Roles
    - (1) Informational
    - (2) Conflict resolution
    - (3) Problem-solving
    - (4) Decision-making
    - (5) Other (e.g., change management)
  - c. Traits
    - (1) Management styles
    - (2) Leadership styles
    - (3) Interpersonal styles
    - (4) Managing a diverse workforce
    - (5) Emotional intelligence

## **TOPIC B – Human Resource Management**

1. Employment laws and regulations
  - a. Compliance (e.g., Equal Employment Opportunity Commission (EEOC), Americans with Disabilities Act (ADA), Occupational Safety and Health Act (OSHA) or other)
  - b. Credentialing and licensure
  - c. Unions and contracts
2. Employment standards
  - a. Job analysis
  - b. Job specifications
  - c. Job descriptions
3. Employment processes
  - a. Recruitment and selection, interviewing skills
  - b. Orientation and training
  - c. Performance improvement, development, and evaluation
  - d. Discipline
  - e. Grievance
  - f. Compensation
  - g. Retention and turnover
  - h. Personnel records
  - i. Cultural humility/competence (e.g., diversity and inclusion, equitable workplaces, scheduling implications, training, etc.)

## **TOPIC C – Financial Management**

1. Budgeting processes and fiscal periods
  - 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) Types of expenses
    - (2) Revenue streams
    - (3) Profitability
  - e. Resource allocation
2. Financial monitoring
  - a. Accounting principles
  - b. Cash control and auditing
  - c. Financial statements
  - d. Financial 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
  - d. Customer service
4. Marketing mix principles
  - a. Product
  - b. Place
  - c. Price
  - d. Promotion

## **TOPIC E – Quality Management and Regulatory Compliance**

1. Regulatory guidelines (e.g., federal, state, local and accreditation agencies)
  - a. Food and nutrition policy (e.g., older adults act legislation, farm bill)
  - b. Federal feeding programs (e.g., Supplemental Nutrition Assistance Program (SNAP), National School Breakfast Program and National School Lunch Program, Child and Adult Care Food Program (CACFP))
  - c. Coding and billing, insurance requirements
  - d. Accreditation agencies (e.g., The Joint Commission, Centers for Medicare & Medicaid Services (CMS), DNV GL Healthcare)
2. Process, implementation, evaluation
  - a. Cost/benefit analysis
  - b. Productivity analysis
  - c. Program and product analysis
  - d. Tools (e.g., Kaizen, Total Quality Management, Lean Six Sigma)
3. Scope of practice and standards of professional performance (SOP, SOPP)
4. Code of ethics

## **DOMAIN IV – FOODSERVICE SYSTEMS (13%)**

### **TOPIC A – Menu Development**

1. Menu
  - a. Patient/resident

- (1) Multi facility
    - (2) Single site
  - b. Commercial
  - c. Non-commercial
- 2. Menu development
  - a. Master menu
  - b. Guidelines and parameters
    - (1) Sensory characteristics
    - (2) Nutritional adequacy
    - (3) Cost
    - (4) Regulations
  - c. Modifications
    - (1) Diet/disease states/life span
    - (2) Preferences/substitutions
    - (3) Nutritional adequacy
    - (4) Food allergies and sensitivities
    - (5) Cultural/religious
    - (6) Vegetarian/vegan
    - (7) Demographics
  - d. Satisfaction Indicators
    - (1) Customer/patient evaluation
    - (2) Sales data
    - (3) Employee satisfaction
  - e. Operational influences
    - (1) Facility/equipment
    - (2) Labor
    - (3) Budget
    - (4) Organizational philosophy (e.g., mission, vision, culture, values)
  - f. External influences
    - (1) Trends
    - (2) Seasonality
    - (3) Emergency/disaster management
    - (4) Product availability

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

- 1. Procurement, receiving, and inventory management
  - a. Procurement principles, concepts, and methods
    - (1) Bid process and contract implementation
    - (2) Specification development
    - (3) Group purchasing/prime vendor
    - (4) Ethics
    - (5) Foodservice management software
  - b. Procurement decisions
    - (1) Product selection/yield (e.g., fresh, frozen, prepackaged)
    - (2) Quality standards
    - (3) Product packaging
    - (4) Cost analysis

- c. Receiving and storage
    - (1) Equipment and methods
    - (2) Records
    - (3) Security
    - (4) Safety and sanitation
  - d. Inventory management
    - (1) Control procedures (e.g., par levels, rotation and minimum/maximum)
    - (2) Issuing procedures
    - (3) Inventory technology
- 2. Principles of quantity food preparation and processing
  - a. Cooking methods
  - b. Equipment
  - c. Preservation and packaging methods
  - d. Modified food preparation
- 3. Food production control procedures
  - a. Standardized recipes
  - b. Ingredient control
  - c. Portion control and yield analysis
  - d. Forecasting production
  - e. Production scheduling
  - f. Food waste management
  - g. Inventory management
  - h. Safety and sanitation
- 4. Production systems
  - a. Conventional
  - b. Commissary
  - c. Ready-prepared (e.g., cook-chill, cook-freeze)
  - d. Assembly/serve
  - e. Display cooking
- 5. Distribution and service
  - a. Type of service systems (e.g., centralized, decentralized and room service)
  - b. Equipment
  - c. Packaging

## **TOPIC C – Sanitation and Safety**

- 1. Sanitation
  - a. Sanitation practices and infection control
    - (1) Personal hygiene
    - (2) Food and equipment
    - (3) Waste disposal
    - (4) Food handling techniques
  - b. Food laws and regulations (e.g., Food Code, government and other agencies)
- 2. Food safety
  - a. Principles
    - (1) Contamination and spoilage
    - (2) Microbiological control
    - (3) Signs and symptoms of food borne illness

- (4) Allergens/cross contact
- b. Food safety management
  - (1) Standard operating procedures
  - (2) Time and temperature control
  - (3) Documentation and recordkeeping
  - (4) Recalls
  - (5) Operational emergencies
  - (6) Bioterrorism
  - (7) Employee behaviors and training
  - (8) Inspections and audits
  - (9) Hazard Analysis Critical Control Point (HACCP)
- 3. Safety
  - a. Employee
    - (1) Universal precautions
    - (2) Equipment use and maintenance
    - (3) Personal work habits
    - (4) Protective equipment
  - b. Practices
    - (1) Environmental conditions
    - (2) Regulations
    - (3) Fire safety
    - (4) Accident prevention
    - (5) Occupational health and safety guidelines
  - c. Documentation and recordkeeping
    - (1) Reporting (e.g., work restrictions, injuries, accidents, Workers' Compensation, spills, falls, exposures)

#### **TOPIC D – Equipment and Facility Planning**

- 1. Facility layout
  - a. Equipment and layout planning
    - (1) Menu
    - (2) Flow of food
    - (3) Service systems
    - (4) Safety and sanitation
    - (5) Privacy and accessibility
    - (6) Codes and standards
    - (7) Budget (e.g., equipment, staff, operational inputs)
    - (8) Staffing (e.g., skill and number)
  - b. Planning team
    - (1) Composition
    - (2) Roles and responsibilities
    - (3) Project management schedule
- 2. Equipment
  - a. Specifications
  - b. Selection
  - c. Installation schedule
  - d. Staff training

3. Sustainability
  - a. Food and water
  - b. Non-food
    - (1) Supplies
    - (2) Equipment
  - c. Waste management
    - (1) Storage
    - (2) Reduce, reuse, recycle
    - (3) Disposal
4. Emergency preparedness and contingency planning
  - a. Inventory (e.g., food, water, and supplies)
  - b. Technology
  - c. Operational inputs (e.g., utilities)
  - d. Staffing
  - e. Safety plan