

**REGISTRATION EXAMINATION FOR DIETETIC TECHNICIANS  
STUDY OUTLINE  
Effective January 1, 2022**

Approved 9/26/2020

**DOMAIN I – NUTRITION SCIENCE AND CARE FOR INDIVIDUALS AND GROUPS – (41%)**

**TOPIC A – Principles of Basic and Normal Nutrition**

1. Nutrients and other functional substances
  - a. Functions
  - b. Deficiencies and excesses
  - c. Macronutrients sources
  - d. Micronutrients sources
  - e. Phytochemicals, fiber, and functional foods
2. Basic human anatomy/physiology, physical and biological sciences (e.g., microbiology and chemistry)
3. Nutrient and calorie needs at various stages of the lifespan (e.g., Dietary Reference Intake/recommended dietary allowance (DRI/RDA), macronutrients, vitamins and minerals)
  - a. Pregnancy and lactation
  - b. Infancy
  - c. Childhood (toddler, preschooler and school age)
  - d. Adolescence
  - e. Adulthood
  - f. Older adults
4. Cultural Humility/Competence
  - a. Religion
  - b. Ethnicity
  - c. Gender (LGBTQ)
  - d. Race
5. Nutrition requirements in wellness promotion and disease prevention
  - a. Identification of desired outcomes/action
    - (1) Evidence-based practice for nutrition intervention
    - (2) Evaluation of nutrition information
    - (3) Food fads/cultism
    - (4) Health/nutrition fraud and/or misinformation
    - (5) Health and wellness promotion and risk reduction
  - b. Nutrition recommendations to promote wellness
  - c. Health disparities

**TOPIC B – Screening and Assessment**

1. Nutrition screening
  - a. Purpose
  - b. Selection, use of risk factors and validated tools
  - c. Values and limitations
  - d. Methodology
  - e. Documentation

2. Nutrition assessment of individuals
  - a. Anthropometric data (e.g., height, weight, body frame, weight/height ratio (BMI), skinfolds, waist circumference, head circumference, growth charts, weight adjustment for amputation)
  - b. Biochemical/laboratory
    - (1) Lab abbreviations
    - (2) Normal lab values
    - (3) Lab values related to disease states
  - c. Clinical
    - (1) Medical history
    - (2) Physical assessments (e.g., blood pressure, signs and symptoms, nutrition-focused physical exam)
    - (3) Relationship of pathophysiology to treatment of nutrition-related disorders
    - (4) Activity/functional ability
    - (5) Drug/medications/nutrient interaction
    - (6) Medical terminology
  - d. Nutrition intake
    - (1) Assessment method
      - a) 24-hour recall
      - b) Food frequency questionnaire
      - c) Diet history
      - d) Fluid status (I/Os)
      - e) Interviews/verification
    - (2) Analysis of dietary information
    - (3) Oral dietary supplements (e.g., vitamins, herbs, medical nutrition supplement and other integrative and functional medicines)
    - (4) Enteral/Parenteral nutrition
  - e. Economic/social
    - (1) Socioeconomic status
    - (2) Cultural/religious food requirements
    - (3) Lifestyles/preferences
    - (4) Food fads/cultism
    - (5) Level of education
    - (6) Nutrition knowledge and interest
    - (7) Needs assessment for services (e.g., internal and external constraints)
    - (8) Educational readiness assessment
      - a) Motivational level
      - b) Educational level
      - c) Situational (e.g., environmental and economic)
      - d) Target groups and populations
    - (9) Food security
3. Nutrition assessment of populations
  - a. Needs assessment data collection and analysis (survey tools and analysis methods)
  - b. Nutrition status indicators
    - (1) Age, gender, ethnic and cultural groups
    - (2) Specific and special needs of community
    - (3) Nutrition risk factors

- c. Nutritional screening surveillance systems
  - (1) National surveys
  - (2) Reference data
- d. Community health resources
  - (1) Food programs
  - (2) Consumer education resources
  - (3) Public health programs

## TOPIC C – Planning and Intervention

1. Intervention for individuals
  - a. Nutrition care for health promotion and disease prevention
    - (1) Identify desired outcomes/actions
      - a) Relationship of nutrition to maintenance of health and prevention of disease during major stages of the life span
      - b) Health/nutrition fraud and/or misinformation
        - i. Fad diets
        - ii. Misleading marketing strategies
    - (2) Determine energy/nutrient needs specific to life span stages
    - (3) Menu planning for health promotion
      - a) Nutritional adequacy
      - b) Client acceptance, diet patterns, schedules
      - c) Socio-cultural ethnic factors
      - d) Substitutions and food preferences
      - e) Cost factors
      - f) Food labeling (e.g., ingredients, allergens, additives)
      - g) Recipe modification
      - h) Culinary demonstrations
      - i) Grocery store tours
  - b. Medical Nutrition Therapy
    - (1) Planning
      - a) Identify desired outcomes and actions
      - b) Treatment of major-related disorders or conditions (e.g., cardiovascular, metabolic, renal, oncology, etc.)
      - c) Determination of energy/nutrient needs specific to condition
      - d) Determine specific feeding needs
        - i. Composition/texture of foods
        - ii. Nutrition products and preparation standards
          - A. Modified diet products
          - B. Enteral feedings
          - C. Medical foods, oral nutrition supplements, and modular supplements
          - D. Infant formula/breastmilk fortifiers
        - iii. Methods of nourishment
          - A. Routes (e.g., oral enteral and parenteral)
          - B. Techniques/equipment
          - C. Values/limitations/complications

- iv. Diet patterns/schedules and/or specific meals for diagnostic tests (e.g., test meals)
    - e) Documentation of client care
      - i. PES statements
      - ii. Other methodology and procedures
  - (2) Implementing care plans
    - a) Provision of individualized nutrition care for specific nutrition-related problems
    - b) Communication regarding plans with:
      - i. Other healthcare personnel (e.g., team rounds and care conferences)
      - ii. Patients and families, including informed consent
    - c) Education
    - d) Discharge planning for continuity of care
    - e) Recommend clients receive physical, social, behavioral and psychological services
    - f) Documentation of intervention/implementation (e.g., appropriate charting techniques, confidentiality and protocol)
- 2. Interventions for populations
  - a. Dietary guidelines and their use
    - (1) Dietary Reference Intake/recommended dietary allowance (DRI/RDA)
    - (2) Meal plans (e.g., MyPlate)
    - (3) Federal dietary guidelines and goals (e.g., *Dietary Guidelines for Americans, Healthy People*)
    - (4) National/international groups
      - a) National Heart, Lung & Blood Institute (NHLBI)
      - b) American Cancer Society
      - c) American Heart Association (AHA)
      - d) National Cholesterol Education Program
      - e) WHO/UNICEF/Centers for Disease Control and Prevention (CDC) breastfeeding guidelines
      - f) Other
  - b. Community nutrition programs services and implementation
    - (1) Federal resources and food assistance programs
      - a) Supplemental Nutrition Assistance Program (SNAP)
      - b) Title III Nutrition Services
      - c) Child nutrition programs (e.g., National School Breakfast Program and National School Lunch Program)
      - d) Special Supplemental Nutrition Program for Women, Infants, and Children
      - e) Expanded Food and Nutrition Education Program (EFNEP)
    - (2) Food banks and other community resources
- 3. Education and training
  - a. Needs assessment/identification of targeted audiences (e.g., patient/client groups, employees, and students)
  - b. Budget development
  - c. Goals and objectives
  - d. Education venue (e.g., in-service, on-the-job training, e-learning, media, and telehealth)
  - e. Content development (e.g., lesson plan, course outline, etc.)

- f. Application of learning tools and methodologies (e.g., community resources, activities, references, handouts and audiovisual aids)
- g. Program promotion
- h. Program implementation
- i. Program evaluation and documentation of effectiveness

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

1. Monitoring progress and updating previous care for uncomplicated conditions
  - a. Monitoring responses to nutrition care
  - b. Comparing outcomes to nutrition interventions
  - c. Monitor medication and dietary supplement use
2. Monitoring tolerance of diet, enteral nutrition and medical nutrition supplements
3. Measuring outcome indicators (e.g., evidence-based guides for practice)
4. Evaluating outcomes for common conditions
  - a. Direct nutrition outcomes
  - b. Clinical and health status outcomes
  - c. Patient-centered outcomes
  - d. Resource utilization outcomes
  - e. Evaluate learner knowledge and performance
5. Collaborate with dietitian
6. Documentation
  - a. Privacy and security of medical information (e.g., Health Insurance Portability and Accountability Act (HIPAA))
  - b. Data collection and reporting
7. Healthcare informatics and technologies
  - a. Electronic medical record
  - b. Nutrient analysis and databases (e.g., on-line database and other)
8. Evaluation of education programs
  - a. Implementation
  - b. Communication
    - (1) Interpersonal
    - (2) Group process
  - c. Methods of instruction
9. Evaluation of educational outcomes and effectiveness of educational plan
  - a. Formative
  - b. Summative

#### **DOMAIN II – FOOD SCIENCE AND FOOD SERVICE (21%)**

##### **TOPIC A – Menu Development**

1. Types of menus
  - a. Nonselective, selective
  - b. Cycle, static
  - c. Retail, restaurant, room service
2. Menu development
  - a. Guidelines
  - b. Clients

- c. Internal and external influences (e.g., renovation, disaster and emergencies)
  - d. Client/customer satisfaction indicators and documentation
  - e. Sensory characteristics
3. Menu modifications (e.g., texture, nutrient, cultural, allergy and food sensitivities)

### **TOPIC B – Procurement and Supply Management**

- 1. Food and product specifications
  - a. Product and packaging selection
  - b. Vendor selection (e.g., bids and contracts)
- 2. Policies and procedures (e.g., purchase, receipt, storage and distribution of food and supplies)
  - a. Purchasing systems, methods and decisions
  - b. Inventory management
  - c. Forecasting food demand
  - d. Ordering food and supplies
  - e. Regulatory compliance (e.g., The Joint Commission, survey requirements, etc.)

### **TOPIC C – Food Production, Distribution, and Service**

- 1. Production
  - a. Procedures
    - (1) Recipe development/standardization and adjustment
    - (2) Cooking methods
    - (3) Ingredient control
    - (4) Portion control
      - a) Yield analysis
      - b) Costing
      - c) Pricing
  - b. Production systems
    - (1) Conventional
    - (2) Commissary
    - (3) Ready-prepared, cook-chill, cook-freeze
    - (4) Assembly/serve
- 2. Distribution and Service
  - a. Form of food delivered
  - b. Type of service systems (e.g., centralized and decentralized)
  - c. Clients and customers served
  - d. Schedules of assembly and breakdown
  - e. Room service
  - f. Foodservice technology (e.g., food and nutrition software)
- 3. Physical and chemical properties of food
  - a. Water
  - b. Vegetables and fruits
  - c. Sugars
  - d. Flours, grains, and cereals
  - e. Milk and dairy products
  - f. Eggs
  - g. Meats, fish, poultry, meat alternatives
  - h. Fats and oils

- i. Beverages
  - j. Functional foods
  - k. Sensory evaluation of food
  - l. Food safety, processing, preservation, and packaging
  - m. Food biotechnology and genetic engineering
4. Food preparation
- a. Functions of ingredients
  - b. Techniques and methods
  - c. Effects on food quality
  - d. Effects on nutrient retention
  - e. Food additives
  - f. Considerations for special nutrition needs (e.g., formulas, supplements, human milk, etc.)

#### **TOPIC D – Sanitation, Safety, Facility and Equipment**

- 1. Safety
  - a. Employee safety
  - b. Safety programs and practices
  - c. Customer safety
- 2. 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) Personnel hygiene
    - (2) Food an equipment temperature control
    - (3) Food handling techniques
    - (4) Hazard Analysis Critical Control Point (HACCP)
  - c. Regulations
    - (1) Governmental (e.g., federal feeding programs, food and nutrition policies, congregate meals, etc.)
    - (2) Accrediting agencies (e.g., The Joint Commission, Center for Medicare & Medicaid Services (CMS), etc.)
  - d. Food quality and safety
    - (1) Temperature
    - (2) Additives
    - (3) Food allergies
    - (4) Documentation and recordkeeping
    - (5) Crisis management (e.g., emergency/disaster preparedness)
- 3. Equipment and facility planning
  - a. Layout design and planning considerations
  - b. Equipment specification
  - c. Equipment selection
  - d. Sustainability
    - (1) Food and water
    - (2) Non-food (e.g., plastic, paper, equipment and energy efficiency, etc.)
    - (3) Waste management (e.g., storage, reduce, reuse, recycle, disposal, etc.)

## **DOMAIN III – MANAGEMENT OF FOOD AND NUTRITION SERVICES (38%)**

### **TOPIC A – Human Resources**

1. Organizational structures
  - a. Organizational charts
  - b. Job descriptions, specifications and classifications
2. Employment processes
  - a. Procedures for regulation compliance
    - (1) Labor laws
    - (2) Union contracts
  - b. Recruitment, selection, and orientation
  - c. Schedule development (e.g., FTEs, overtime)
  - d. Productivity and work simplification
  - e. Performance standards and competencies
  - f. Performance appraisals and documentation
  - g. Personnel actions
  - h. Retention (e.g., turnover)
  - i. Diversity

### **TOPIC B – Finance and Materials**

1. Budget development
  - a. Financial objectives
  - b. Budget types
    - (1) Operations
    - (2) Capital
    - (3) Other
  - c. Components
    - (1) Expense types
    - (2) Revenue streams
    - (3) Profitability
2. Financial analysis
  - a. Labor
  - b. Food and supplies
  - c. Capital
  - d. Other
3. Cost controls and materials management
4. Financial performance monitoring and evaluation

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

1. Marketing principles
  - a. Techniques and methods (e.g., surveying audience needs and preferences)
  - b. Preparation and implementation (e.g., recruitment of participants)
  - c. Evaluation (e.g., document findings, adjust and correct plan)
2. Marketing strategies/market mix principles
  - a. Product
  - b. Place
  - c. Promotion



- d. Price

## **TOPIC D – Management Principles and Functions**

1. Management principles
  - a. Approaches
    - (1) Classical/traditional
    - (2) Behavioral
  - b. Skills
    - (1) Technical
    - (2) Human
    - (3) Conceptual
  - c. Roles
    - (1) Leadership
    - (2) Conflict resolution
    - (3) Problem-solving
    - (4) Decision-making
    - (5) Communication
2. Management functions
  - a. Planning
    - (1) Short and long range
    - (2) Strategic and operational
    - (3) Policies and procedures
    - (4) Emergency/disaster preparedness
  - b. Organizing
    - (1) Structure/design of department/unit
    - (2) Establishing priorities
    - (3) Tasks/activities and action plans
    - (4) Resource allocation
  - 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
3. Scope of practice (SOP) and standards of professional performance (SOPP)
  - a. Roles and levels of dietetics personnel (e.g., qualifications)
  - b. Legislative process (e.g., funding and grants)
  - c. Ethics

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

1. Regulatory guidelines (e.g., federal, state, local and accreditation agencies)
2. Quality process and implementation
  - a. Planning
  - b. Standards/criteria/indicators
  - c. Documentation of data collection and outcomes
  - d. Corrective actions
  - e. Evaluate effectiveness
  - f. Reporting/reports
3. Research
  - a. Identifying problems
  - b. Data collection (e.g., clinical, management, community, and other)
  - c. Collaborative analysis
  - d. Evidence-based research findings
  - e. Reporting/reports