DOMAIN I – PRINCIPLES OF DIETETICS (25%)

TOPIC A – Food Science and Nutrient Composition of Foods

1. Food science
   a. Physical and chemical properties of food
      (1) Water
      (2) Vegetables and fruits
      (3) Sugars
      (4) Flour and cereals
      (5) Milk and dairy products
      (6) Eggs
      (7) Meats, fish, poultry, meat alternatives
      (8) Fats and oils
      (9) Leavening agents
      (10) Batters and doughs
      (11) Beverages
      (12) Functional foods
      (13) Sensory evaluation of food
      (14) Food preservation
      (15) Food processing
      (16) Food packaging
      (17) Food biotechnology and genetic engineering
   b. Scientific basis for preparation and storage
      (1) Function of ingredients
      (2) Techniques of food preparation
      (3) Effects of techniques and methods on
         (a) Aesthetic properties
         (b) Nutrient retention
      (4) Roles of food additives

2. Composition of food
   a. Sources of data, labels
   b. Macro and micronutrients sources
   c. Phytochemicals
   d. Nutrient databases
   e. Nutrient analysis

TOPIC B – Nutrition and Supporting Sciences

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

2. Principles of normal human anatomy, physiology, and biochemistry
a. Gastrointestinal
   (1) Ingestion
   (2) Digestion
   (3) Absorption
   (4) Metabolism
   (5) Excretion
b. Renal
c. Pulmonary
d. Cardiovascular
e. Neurological
f. Musculoskeletal
g. Reproductive
3. Health determinants and epidemiology (e.g., income, culture, social status, education, physical environment, social network, genetics, gender, race, and sexual orientation)
a. Nutrition requirements and health promotion and disease prevention

**TOPIC C – 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 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: motivational, 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
b. Evaluation of effectiveness of educational plan
5. Client Information
   a. Records
   b. Confidentiality
6. Documentation
7. Orientation and training
8. 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 PHI, use for outcomes and use for NCP)
   c. Food and nutrient analysis software and databases
   d. Foodservice management software
9. Public policy advocacy and legislation

TOPIC D – Research Applications

1. Types of research
2. Research process (e.g., 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
5. Analysis, interpretation, and integration of evidence-based research findings
6. Presentation of research data and outcomes
7. Reporting research findings (e.g., writing manuscripts)
8. Use of evidence analysis as the basis for practice decisions (e.g., Evidence Analysis Library)

DOMAIN II – NUTRITION CARE FOR INDIVIDUALS AND GROUPS (40%)

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) Prescription and over-the-counter medications
   (2) Medication/food 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 indicators
   (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 contributing 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. Determination of energy/nutrient needs specific to life span stage
   c. Implementing care plans
      (1) Nutrition recommendations to promote wellness
      (2) Communication and documentation
         (a) Patient rounds
         (b) Care conference

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 (e.g., protein, calorie, vitamin and mineral)
      (6) Metabolic, endocrine, and inborn errors of metabolism
      (7) Oncologic and hematologic conditions
      (8) Organ system dysfunction
      (9) Orthopedic/wounds
      (10) Obesity
   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
         (e) 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 - NCP, regulatory and patient safety issues)
      (3) Counseling and training (e.g., nutrition plans, medical devices and formula preparation)
      (4) Communication and documentation
(5) Discharge planning and disease management
   (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 Dietary Guidelines for Americans
   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 and evaluating tolerance to interventions (e.g., medications, tube feeding, parenteral nutrition, and medical nutrition and dietary supplements)
   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. Healthcare utilization outcomes

4. Relationship with outcomes measurement systems and quality improvement

5. Determining continuation 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
   c. Traits
      (1) Management styles
      (2) Leadership styles
      (3) Interpersonal styles
      (4) Managing a diverse workforce

3. Scope of Practice and Standards of Professional Performance

TOPIC B – Human Resources

1. Employment laws and regulations
   a. Regulatory compliance (e.g., EEOC, ADA or other)
   b. Unions and contracts

2. Employment standards
   a. Job analysis
   b. Job specifications
   c. Job descriptions

3. Employment processes
   a. Recruitment and selection
   b. Orientation and training
   c. Performance improvement and development
   d. Discipline
   e. Grievance
   f. Compensation
   g. Retention and turnover
   h. Personnel records
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. Resources 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 Improvement

1. Regulatory guidelines (e.g., federal, state, local and accreditation agencies)
2. Process, implementation, evaluation
   a. Cost/benefit analysis
   b. Productivity analysis
   c. Program and product analysis

DOMAIN IV – FOODSERVICE SYSTEMS (14%)

TOPIC A - Menu Development

1. Menu
   a. Patient/resident
   b. Commercial
   c. Non-commercial
2. Menu development
   a. Master menu
   b. Guidelines and parameters
      (1) Aesthetics
      (2) Nutritional adequacy
      (3) Cost
      (4) Regulations
   c. Modifications
      (1) Diet/disease states/lifespan
      (2) Substitutions
      (3) Nutritional adequacy
      (4) Food allergies and sensitivities
      (5) Cultural/religious
      (6) Vegetarian/vegan
   d. Satisfaction Indicators
      (1) Customer evaluation
      (2) Sales data
   e. Operational influences
      (1) Equipment
      (2) Labor
      (3) Budget
   f. External influences
      (1) Trends
      (2) Seasonality
      (3) Emergency 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
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 (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

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
   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., government and other agencies)

2. Food safety
   a. Principles
      (1) Contamination and spoilage
      (2) Microbiological control
      (3) Signs and symptoms of food borne illness
b. Food safety management
   (1) HACCP
   (2) Time and temperature control
   (3) Documentation and record keeping
   (4) Recalls
   (5) Operational emergencies
   (6) Bioterrorism
   (7) Employee behaviors and training

2. Safety
   a. Employee
      (1) Universal precautions
      (2) Equipment use and maintenance
      (3) Personal work habits
   b. Practices
      (1) Environmental conditions
      (2) Regulations
      (3) Fire safety
      (4) Accident prevention
   c. Documentation and record keeping

**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
   b. Planning team
      (1) Composition
      (2) Roles and responsibilities

2. Equipment specifications and selection

3. Sustainability
   a. Food and water
   b. Non-food
      (1) Supplies
      (2) Equipment
   c. Waste management
      (1) Storage
      (2) Reduce, reuse, recycle
      (3) Disposal