

DEPARTMENT OF NUTRITION, EGRA S.S.B COLLEGE, 721429
PROGRAMME OUTCOME(PO), COURSE OUTCOME(CO) AND PROGRAMME SPECIFIC
OUTCOME(PSO) FOR END SEMESTER STUDENTS: UNDERGRADUATE COURSE

Programme Name: B.Sc. HONS (NUTRITION)

PROGRAMME OUTCOMES:

PO1	Interdisciplinary Knowledge	Apply the knowledge of nutrition, dietetics, food sciences, nutritional physiology, nutritional biochemistry, nutritional biophysics, research methodology, statistics, epidemiology, demography, immunology, molecular biology, nutrigenomics, metabolomic and epigenetic to the solution of health problems.
PO2	Problem Analysis	Identify, formulate, research literature, and analyze complex health problems and searching out the solutions by applying the modified foods and nutrients to mitigate the problems.
PO3	Conduct Investigations of Complex Problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions regarding nutrition solving diseases.
PO4	Modern Tool usage	Food is first line medicine; the nutritional sciences have long benefited from the intellectual and pragmatic input of ideas and techniques from other medicinal and pharmaceuticals disciplines.
PO5	The Nutritionist and Society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional dietitian practice.
PO6	Ethical Values	Students will be able to discuss the ethical implications of our understanding of nutrition and nutritional discoveries and to develop the culture of value-based thinking, understand the pros and cons while taking decisions, and lead a sound value based ethical life.
PO7	Research & Life-long Learning	Students will be able to demonstrate a depth of knowledge within their area of study and a breadth of knowledge across the field of nutrition. Students will be able to design and complete research study and/or scientific experiments.
PO8	Familiarity with Recent Developments	Students will able to gathered recent knowledge in different practical techniques regarding nutrigenomics.
PO9	Ability in Creative Skills	Students will be able to discuss and practice professional standards of scientific inquiry and responsible conduct of scientists that are essential for the pursuit of new knowledge. Students will be able to process and analyze data to make sound interpretations.
PO10	Environmental Awareness & Sustainability	Students will able to understand and aware the importance of environment in our life. Students will able to understand and aware the community regarding the environmental pollution and their management. A beautiful forest-like campus that provides gorgeous scenery, and a quiet and comfortable learning environment.

PROGRAMME SPECIFIC OUTCOME(PSO):

PSO 1: To make students learn nutrition and apply nutritional knowledge to important public health issues and distribute such knowledge to population.

PSO 2: Students acquire practical knowledge on diet counselling and diet planning.

PSO 3: Students of nutrition will get an idea of various aspects of entrepreneurship, various food service outlets and their staff organization, menu planning, service style, beverages.

PSO 4: Nutrition graduates have ample scope in academics, higher research institutes, hospital industry, NGO services, food industry, government services and many others.

COURSE OUTCOME(CO)

CO15: [Paper CC13 -Dietetics and Counselling (Theory)]

CO 15 :1	Understand the principles and methods of counselling.
CO 15:2	Understand how to Apply counselling methods to patients with different diseases
CO 15:3	Gain knowledge on computer operations and applications
CO 15:4	Facilitate students to design and use computer-based projects and programs.

CO15: [Paper CC13 -Dietetics and Counselling (Practical)]

CO 15:1	Gain practical knowledge on planning nutrition counselling session and organising health camps
CO 15:2	Impart the nutrition education using visual aids
CO 15:3	Acquire skills in collecting and submitting data of different disease

CO16: [Paper CC14 –Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units (Theory)]

CO16: 1	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.
CO16: 2	Brief idea of various food service outlets and their staff organization, menu planning, service style, beverages.
CO16: 3	Understand the basic principles of management in food service units
CO16: 4	Develop managerial skills in food service industries.
CO16: 5	Update the skills and techniques in starting up a food service unit successfully.
CO16: 6	Gain knowledge on personnel management

CO16: [Paper CC14 –Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units (Practical)]

CO16: 1	Learn about SWOT Analysis
CO16: 2	Acquire skills in market survey

CO17: [Paper DSE3 T – Geriatric Nutrition (Theory)]

CO17: 1	Gain knowledge on geriatric nutrition
CO17: 2	understand the basic principles of geriatric nutrition
CO17: 3	Detailed study of geriatric nutrition required in community nutrition, to know issues and challenges, clinical geriatric, social geriatric.
CO17: 4	Brief idea of various aspect of health issues and their nutritional requirement, menu planning, dietary guidelines etc.

CO17: [Paper DSE3 P – Geriatric Nutrition (Practical)]

CO17: 1	Learn about nutritional assessment and diet counselling
CO17: 2	Brief idea preparation of dishes suitable for older person- soft, semisolid, easily digestible, nutritious and calorie dense balanced diet

CO18: [Paper DSE4 T – Bakery Technology and Mushroom Culture (Theory)]

CO18: 1	Apply and examine the knowledge in the field of bakery technology and mushroom culture for self-employment.
CO18: 2	Evaluate new and emerging technology and related underpinning science inbakery technology and mushroom culture sectors.
CO18: 3	Demonstrate advanced knowledge and skills in selective bakery products development and commercialization based on the characteristics of food product and characteristics of packaging materials and storage and distribution of requirements.

CO18: [Paper DSE4 P - Bakery Technology and Mushroom Culture (Practical)]

CO18: 1	Testing of physical/mechanical properties of bakery products.
CO18: 2	Understanding mushroom culture in small and large scale and commercial exportation.

DETAILED SYLLABUS OF END SEMESTER UG (HONOURS) COURSES, DEPARTMENT OF NUTRITION

CC-13: Dietetics and Counselling Credits 06

CT13: Dietetics and Counselling Credits 04

Course Contents: Unit-I: Introduction to Psychology and counselling Introduction to psychology Definition, Nature and Scope. Attention and perception–Types of attention and factors influencing attention, principles of perceptual organization and abnormalities in perception. Learning and memory- Types of learning, Types of memory, Forgetting and its causes. Motivation and emotion- Types of motives, types of emotions, emotional expression. Personality- nature and definition, factors influencing personality, Psycho analytic theory of personality. Nature and goals of counselling. Principles of counselling. Characteristics of a good counsellor. Ethical principles of counselling. Special areas of counselling: Educational, family, health, community and counselling of alcoholic, and drug addicts.

Unit-II: Counselling Skills Approaches to counselling–i. Psycho analytic approach, ii. Behavioristic, iii. Humanistic approach. Pre Helping phase: i. Rapport building skills, ii. Attending and listening skills, Stage I skills: Empathy, respect, Genuineness and concreteness, Stage II skills: Advanced empathy, self-disclosure, Immediacy and Confrontation. Stage III skills: Goal setting, Action plan Program me and Brainstorming.

Unit-III: Basics of Diet Counseling Diet Counselling - meaning, significance, process, types. Goals of counselling, individuals, group and family counselling. Basic sequence in counselling. Materials needed for counselling models, charts, posters, AV aids, Handouts etc. Communication process in counselling and linguistics in clinical dietary practices, problems in communication. Role of Counsellor & Counseelee. Techniques of obtaining relevant information- 24 Hour Dietary recall, List of food likes and dislikes, Lifestyle. Dietician as a part of medical team and research team. Impact of counselling on health and disease of individuals – discussion of hospital case studies.

Processes involved in dietary counselling - Managing resources of the communicator/counselor. Designing of counseling plans -goals & objectives, evaluation instruments. Implementation: facilitating self-management of disease condition. Evaluation: evaluating adherence to dietary changes. Counseling approaches after evaluation.

Unit-IV: Practical consideration in giving dietary advice and counselling a) Factors affecting and individual food choice. b) Communication of dietary advice c) Consideration of behavior modification d) Motivation.

Unit-V: Counselling and educating patient a) Introduction to nutrition counselling, b) Determining the role of nutrition counsellor, c) Responsibilities of the nutrition counselor, d) Practitioner v/s client managed care, e) Conceptualizing entrepreneur skills and behavior, f) Communication and negotiation skills.

Unit-VI: Teaching aids used by dietitians Charts, leaflets, posters etc., preparation of teaching material for patients suffering from Digestive disorders, Hypertension, Diabetes, Atherosclerosis & Hepatitis and cirrhosis.

Unit-VII: Diet Counselling at Hospital and Community level Role of counselling in hospital. Role of counselling in community. Organizing health camps and patient feedback–at hospital level. Organizing health camps and patient feedback –at community level. Dietary counseling through the life span - Diet counselling plans for obese people, Diabetics, CVD, dyslipidemia, cancer risk prevention, renal diseases, liver disorders mother and child care, Prenatal and pregnant women, Lactating women Childhood nutrition problems like, SAM, weight management, vitamin and mineral deficiencies, School children, adolescents, young adults, fitness, weight management, eating disorders. Geriatric counselling. Patient follow up / home visits,

Unit-VIII: Computer application a) Execution of software packages. b) Straight line, frequency table, bar diagram, pie chart, Preparation of dietary charts for patients. c) Statistical computation- mean, median, standard deviation, conclusion and regression test.

Unit-IX: Computer application in dietetic management a) Use of computers by dietician, b) Dietary computations, c) Dietetic management, d) Education/ training, e) Information storage, f) Administrations, g) Research

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Unit -X: Nutritional/medicinal role of traditional foods:

Traditional food beliefs, role of Ayurveda, Naturopathy, Yoga and other traditional medicines in disease management.

C13P: Dietetics and Counselling (Practical) Credits 02 Practical

1. Computer application for collection of data of different diseases. Submitting computed data.
2. Preparations of teaching aids in the field of nutrition.
3. Preparation of case history of a patient and feeding of information in the hard disc.
4. Understanding the use of conventional and non-conventional methods of counseling i. Face to face counseling. ii. Use of software for counseling Dietcal. iii. Use of any one Diet App for counseling and assessing food intake.
5. Planning Nutrition counseling sessions and identifying ways to adhere to dietary changes for the following conditions: Lactation counseling, SAM. Eating disorders. Overweight / Obesity in School children, adolescent and adults. Metabolic syndrome. Diabetes- Gestational Diabetes. Renal disease, Liver disorders.
6. Organizing health camps and patient feedback –both at hospital level and community level.
7. Project planning for any one disease.

CC- 14: Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units Credits 06

C14T: Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units Credits 04

Course Contents:

Unit-I: Entrepreneurship development Entrepreneurship - concept, definition, need and significance of entrepreneurship development in India, entrepreneurship growth process, barriers, entrepreneurship education model.

Entrepreneur- their characteristics, types, gender issues, role demands and challenges. Entrepreneurial motivation. Challenges faced by Women Entrepreneurs

Unit- II: Enterprise Planning and Launching Types of enterprises classification based on capital, product, location, ownership pattern and process. Sensing business opportunities and assessing market potential; market research. Appraising of project and feasibility

Unit-III: Enterprise Management and Networking a. Organization and Management - Principles of management. Functions of management/ manager. b. Managing Production: Organizing Production; input- output cycle. Ensuring Quality c. Managing marketing: Understanding markets and marketing. Functions of marketing.4Ps of marketing (same as marketing mix).

d. Financial Management: Meaning of Finance. Types and sources of Finance. Estimation of project cost. Profit Assessment. Networking of Enterprises. Importance of Financial Management. Budgets and Budgeting process. Cost concepts

Unit - IV: Personnel management Functions of a personnel manager, Factors to consider while planning the kind and number of personnel: Menu, type of operations, Type of service, Job description and job specification
Unit-V: Food service units, Menu planning, Food production process, Space and equipment

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1. Food service units: Origin of Food Service units. Kinds of food service units.
 2. Menu Planning: Importance of menu. Factors affecting menu planning, Types of menus.
 3. Food Production Process: Food purchase and receiving, Storage. Quantity food production: Standardization of recipes, Recipe adjustments and portion control, Quantity food production techniques. Food service. Food hygiene and sanitation.
 4. Space and Equipment: Types of kitchen areas, Flow of work and work area relationship. Equipment
 - a) Factors affecting selection of equipment,
 - b) Equipment needs for different situations
- Unit VI: Planning of a small food service unit
- a. Preliminary Planning: Survey of types of units, identifying clientele, menu, operations and delivery.
 - b. Planning the set up:
 - a) Identifying resources, b) Developing Project plan, c) Determining investments

Unit-VII: Development of a business plan

CC14P: Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units (Practical) Credits 02 Practical

1. SWOT analysis with respect to entrepreneurial competencies through case profiling of successful entrepreneurs and enterprises.
 2. Achievement Motivation lab-development of entrepreneurial competencies.
 3. Survey of an institution facilitating entrepreneurship development in India.
 4. Preparation of business plan.
 5. Market survey for food items both raw and processed.
- Survey of food service units.
6. Standardization of a recipe.
 7. Preparing Quick Foods for scaling up for quantity production.
 8. Planning menus for the following:
 - a. Packed meals for office employees.
 - b. Nutritious Tiffin for school children.
 - c. School/college canteens.
 9. Demonstration of a specialized cuisine.
 10. Develop a checklist for good hygiene practices.

DSE-3: Geriatric Nutrition (T+P)Or

DSE-3: Nutrition Communication for Health Promotion (T+P)Or

DSE-3: Personnel Management and Food Service Management (T+P)

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JUSTIFICATION MATRIX OF CO WITH PO & PSO (High: 3, Medium: 2, Low: 1)

	Mapping	Correlation	Justification
CO 15:1	PO4	HIGH	Understand the principles and methods of counselling.
	PO5	HIGH	Gain knowledge on planning nutrition counselling session and organizing health camps
	PO7	HIGH	Impart the nutrition education using visual aids
	PSO1	HIGH	Acquire skills in collecting and submitting data of different disease
	PSO2	HIGH	Impart the nutrition education using visual aids
	PSO4	HIGH	Acquire skills in collecting and submitting data of different disease
CO 15:2	PO1	HIGH	Understand how to Apply counselling methods to patients with different diseases
	PO2	HIGH	Impart the nutrition education using visual aids
	PO3	HIGH	Gain knowledge on computer operations and applications
	PSO1	HIGH	Acquire skills in collecting and submitting data of different disease
	PSO2	HIGH	Impart the nutrition education using visual aids
	PSO4	HIGH	Understand how to Apply counselling methods to patients with different diseases
CO 15:3	PO1	HIGH	Gain knowledge on computer operations and applications
	PO2	HIGH	Acquire skills in collecting and submitting data of different disease
	PO3	HIGH	Gain knowledge on computer operations and applications
	PSO1	HIGH	Understand how to Apply counselling methods to patients with different diseases
	PSO2	HIGH	Impart the nutrition education using visual aids
	PSO4	HIGH	Acquire skills in collecting and submitting data of different disease
CO 15:4	PO1	HIGH	Facilitate students to design and use computer-based projects and programs.
	PO3	HIGH	Gain practical knowledge on planning nutrition counselling session and organizing health camps
	PO8	MEDIUM	Impart the nutrition education using visual aids
	PSO1	HIGH	Acquire skills in collecting and submitting data of different disease

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	PSO2	HIGH	Facilitate students to design and use computer-based projects and programs.
	PSO4	HIGH	Impart the nutrition education using visual aids
CO 16: 1	PO4	HIGH	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.
	PO6	HIGH	Brief idea of various food service outlets and their staff organization, menu planning, service style, beverages.
	PO8	MEDIUM	understand the basic principles of management in food service units
	PSO1	HIGH	develop managerial skills in food service industries.
	PSO3	HIGH	update the skills and techniques in starting up a food service unit successfully.
	PSO4	HIGH	Gain knowledge on personnel management
CO 16: 2	PO5	HIGH	Learn about SWOT Analysis
	PO7	HIGH	Acquire skills in market survey
	PO8	HIGH	Gain knowledge on personnel management
	PSO1	HIGH	Acquire skills in market survey
	PSO3	HIGH	Learn about SWOT Analysis
	PSO4	HIGH	Acquire skills in market survey
CO 16: 3	PO4	HIGH	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.
	PO8	HIGH	Brief idea of various food service outlets and their staff organization, menu planning, service style, beverages.
	PO10	HIGH	understand the basic principles of management in food service units
	PSO1	MEDIUM	develop managerial skills in food service industries.
	PSO3	HIGH	update the skills and techniques in starting up a food service unit successfully.
	PSO4	HIGH	Gain knowledge on personnel management
CO 16: 4	PO5	HIGH	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.
	PO7	HIGH	Brief idea of various food service outlets and their staff organization, menu planning, service style, beverages.
	PO8	HIGH	understand the basic principles of management in food service units
	PSO1	HIGH	develop managerial skills in food service industries.
	PSO3	HIGH	update the skills and techniques in starting up a food service unit successfully.
	PSO4	HIGH	Gain knowledge on personnel management
CO 16: 5	PO4	HIGH	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.
	PO7	HIGH	Brief idea of various food service outlets and their staff organization, menu planning, service style, beverages.
	PO10	HIGH	understand the basic principles of management in food service units
	PSO1	HIGH	develop managerial skills in food service industries.
	PSO3	HIGH	update the skills and techniques in starting up a food service unit successfully.
	PSO4	HIGH	Gain knowledge on personnel management
CO 16: 6	PO5	HIGH	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.

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	PO6	HIGH	Brief idea of various food service outlets and their staff organization, menu planning, service style, beverages.
	PO8	HIGH	understand the basic principles of management in food service units
	PSO1	HIGH	develop managerial skills in food service industries.
	PSO3	HIGH	update the skills and techniques in starting up a food service unit successfully.
	PSO4	HIGH	Gain knowledge on geriatric nutrition
CO 17:1	PO4	HIGH	Gain knowledge on Clinical geriatric nutrition
	PO6	HIGH	understand the basic principles of dietary management
	PO10	HIGH	Detailed study of equipment's required in food service industry, planning and designing various food service outlets, kitchen management and sanitation.
	PSO1	MEDIUM	Brief idea of various aspect of health issues and their nutritional requirement, menu planning, dietary guidelines etc.
	PSO3	HIGH	Gain knowledge on social geriatric nutrition
	PSO4	HIGH	understand the issues and challenges in geriatric nutrition.
CO 17:2	PO8	HIGH	Gain knowledge on nutritional assessment
	PO9	HIGH	understand the basic principles of nutritional management
	PO10	HIGH	Detailed study of geriatric nutrition required in community nutrition, to know issues and challenges, clinical geriatric, social geriatric.
	PSO1	HIGH	Brief idea of various food service outlets and their menu planning, service style, beverages.
	PSO3	HIGH	understand the basic principles of food management in clinical settings.
	PSO4	HIGH	Detailed study of geriatric nutrition required in community nutrition, to know issues and challenges, clinical geriatric, social geriatric.
CO 17:3	PO1	HIGH	Gain knowledge on social geriatric nutrition
	PO3	MEDIUM	understand the basic principles of food management
	PO8	HIGH	Detailed study of geriatric nutrition required in community nutrition, to know issues and challenges, clinical geriatric, social geriatric.
	PSO1	HIGH	Brief idea of various food service outlets and their menu planning, service style, beverages.
	PSO3	HIGH	Learn about nutritional assessment and diet counselling
	PSO4	HIGH	Brief idea preparation of dishes suitable for older person- soft, semisolid, easily digestible, nutritious and calorie dense balanced diet.
CO 17:4	PO4	HIGH	Gain knowledge on social geriatric nutrition
	PO6	MEDIUM	understand the basic principles of food management in clinical settings.
	PO10	HIGH	Detailed study of geriatric nutrition required in community nutrition, to know issues and challenges, clinical geriatric, social geriatric.
	PSO1	HIGH	Brief idea preparation of dishes suitable for older person- soft, semisolid, easily digestible, nutritious and calorie dense balanced diet.
	PSO3	HIGH	Learn about nutritional assessment and diet counselling
	PSO4	HIGH	Brief idea preparation of dishes suitable for older person- soft, semisolid, easily digestible, nutritious and calorie dense balanced diet.
CO 18: 1	PO5	HIGH	Apply and examine the knowledge in the field of bakery

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			technology and mushroom culture for self-employment.
	PO7	MEDIUM	Demonstrate advanced knowledge and skills in selective bakery products development and commercialization based on the characteristics of food product and characteristics of packaging materials and storage and distribution of requirements.
	PO9	HIGH	Testing of physical/mechanical properties of bakery products.
	PSO1	HIGH	Understanding mushroom culture in small and large scale and commercial exportation.
	PSO3	HIGH	Testing of physical/mechanical properties of bakery products.
	PSO4	HIGH	Evaluate new and emerging technology and related underpinning science in food science in packaging
CO 18: 2	PO7	HIGH	Evaluate new and emerging technology and related underpinning science in bakery technology and mushroom culture sectors.
	PO8	MEDIUM	Evaluate new and emerging technology and related underpinning science in bakery products development.
	PO9	HIGH	Demonstrate advanced knowledge and skills in selective bakery products development and commercialization based on the characteristics of food product and characteristics of packaging materials and storage and distribution of requirements.
	PSO1	HIGH	Testing of physical/mechanical properties of food packaging material.
	PSO3	HIGH	Apply and examine the knowledge in the field of bakery technology and mushroom culture for self-employment.
	PSO4	HIGH	Evaluate new and emerging technology and related underpinning science in bakery products development.
CO 18: 3	PO7	HIGH	Apply and examine the knowledge in the field of bakery.
	PO8	HIGH	Evaluate new and emerging technology and related underpinning science in food science in packaging
	PO9	MEDIUM	Demonstrate advanced knowledge and skills in selective bakery products development and commercialization based on the characteristics of food product and characteristics of packaging materials and storage and distribution of requirements.
	PSO1	HIGH	Testing of physical/mechanical properties of food packaging material.
	PSO3	HIGH	Understanding mushroom culture in small and large scale and commercial exportation.
	PSO4	HIGH	Apply and examine the knowledge in the field of bakery.

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ARTICULATION MATRIX OF CO WITH PO & PSO

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO15.1	3	3					3			3	3	2
CO15.2	3	3					3			3	3	3
CO15.3	3	2					3			2	2	3
CO15.4												
CO16.1	3			3	2		2	3	2		2	2
CO16.2	2			3	3			2	2		1	2
CO16.3	2			3	3		2	3	3		2	2
CO16.4	3		2	2	2		3	3	3		2	
CO16.5												
CO16.6												
CO17.1	3					2			2		2	3
CO17.2	3					2			2		2	3
CO17.3												
CO17.4												
CO18.1	3			3		2			2		2	3
CO18.2	3			3		3			3		3	3
CO18.3												
TARGET	2.8	2.6	1	2.8	2.5	2.2	2.6	2.7	2.3	2.6	2.1	2.6