

## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)  
Approved by Government of Tamil Nadu & Accredited by NAAC with 'A++' Grade (3<sup>rd</sup> Cycle-3.64 CGPA)  
Dr. N.G.P.- Kalapatti Road, Coimbatore-641 048, Tamil Nadu, India.  
Website: www.dmgpsc.ac.in | Email: info@dmgpsc.ac.in. | Phone: +91-422-2369100

BoS

20<sup>th</sup>

### Department of Food Science and Nutrition

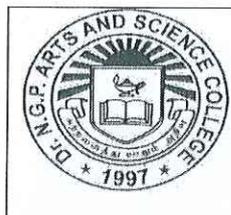
#### Board of Studies Meeting

Academic Year: 2025-26

The minutes of the 20<sup>th</sup> meeting of Board of Studies held on 10.11.2025 at 10.00 am at B1 Block- Room No. 1512 (Department of Food Science & Nutrition).

#### Members Present:

S. No.	Name	Category
1.	Dr. D. Sridevi	Chairman
2.	Dr. Subbarao M. Gavaravarapu Scientist 'F' & Head Dept. of Nutrition Information Communication & Health Education (Niche) ICMR - National Institute of Nutrition	University Nominee
3.	Dr. R. Radha Associate Professor Dept. of Food Service Management and Dietetics Avinashilingam University	Subject Expert
4.	Mrs. C. Vandhana Chief Dietitian Ramakrishna Hospitals	Industrial Expert
5.	Ms. Shobana Priya N Dietitian Progen Weight Management	Alumni
6.	Dr. Meera Raman	Member
7.	Dr. Priya A	Member
8.	Ms. Anjali M	Member
9.	Dr. Jancy Rani D	Member
10.	Ms. G. Priyaalini	Member
11.	Ms. Kanishka B	Member
12.	Mrs. G. Latha	Member
13.	Ms. Adithya A V	Member
14.	Ms. Nirmala K	Member
15.	Dr. N. Kuppuchamy	Co-opted Member
16.	Dr. A. Hazel Verbina	Co-opted Member
17.	Dr. R. Ravikumar	Co-opted Member
18.	Dr. S. Gowri	Co-opted Member
19.	Ms. J. Fasiha	Student Representative - PG



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The HoD and Chairman of the department of Food Science & Nutrition welcomed and introduced all the members and appreciated them for their continuous support and contribution for the development of academic standard and enrichment of the syllabus.

Further, Chairman informed the inability of the following members to attend the meeting and requested to grant leave of absence.

1. Dr. Suresh D Sakhare (Subject Expert)
2. Ms. Rakeshwari M (Member)
3. Ms. S. Neha (Student Representative)

After brief discussion the items of the agenda were taken one by one for discussion and the following resolutions were passed.

**Item 20.1:** *To review and approve the minutes of the previous meeting held on 28-06-2025.*

The chairman of the Board presented the minutes of the previous meeting held on 28-06-2025 and requested the members to approve. After brief discussion the following resolution was passed.

**Resolution:**

**Resolved to approve the minutes of the previous meeting held on 28-06-2025**

**Item 20.2:** *To consider and approve the syllabi for II semester for UG and PG students admitted during the academic year 2025-2026.*

The chairman presented the detailed scheme and regulation for the students admitted from the academic year 2025-26 for II semester. The members deliberated in detail about the modification required. After discussion it is unanimously decided to adopt the following changes.



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### Changes Made:

#### UG:

Course Code	Course	Reason
25FNU2CA	<b>Core:</b> Principles of Nutrition	<p>Dr. Radha R suggested to include the following topics as it is essential to understand the different nutrients and metabolic processes to determine overall nutritional status and wellbeing.</p> <ul style="list-style-type: none"> <li>• Unit I - Physiological fuel and gross value of food. Determinants of energy requirement of body.</li> <li>• Unit II - Essential fatty acids- Classification, types, functions, RDA, sources, and deficiency.</li> <li>• Unit III – NPR and Semi-essential amino acids</li> <li>• Unit IV - Cyanocobalamin, Biotin</li> <li>• Unit V – Macro minerals – Sodium &amp; Potassium, Microminerals – Selenium and Molybdenum</li> </ul>
25FNU2CP	<b>Core Practical:</b> Quantitative Nutrient Analysis	<p>Dr. Subbarao M Gavaravarappu suggested to include the following experiments to study the pigment stability and rancidity is important to ensure the shelf life of foods.</p> <p><b>Experiments Under DBT:</b></p> <ol style="list-style-type: none"> <li>1. Effect of pigment stability at different pH Levels</li> <li>2. Estimation of Rancidity</li> </ol>

#### PG:

Course Code	Course	Reason
25FNP2CA	<b>Core:</b> Macronutrients	<p>Dr. Subbarao M Gavaravarappu suggested to include the following topics as it is crucial to understand the adaptations during nutritional imbalances and supports disease prevention.</p> <ul style="list-style-type: none"> <li>• Unit II - Metabolism during starvation</li> <li>• Unit III - Effects of over consumption of fibre</li> <li>• Unit IV - Evaluation of protein quality, Protein synthesis and turnover, Transport of lipid in blood</li> <li>• Unit V – Acid base balance, Electrolyte Homeostasis, Chloride shift</li> </ul>
25FNP2CB	<b>Core:</b> Applied Physiology	<p>Dr. Radha R suggested to include the following topics as this knowledge underpins advanced learning and practical applications in aiding in the understanding and management of disorders associated with metabolism, sleep, and cognition.</p> <ul style="list-style-type: none"> <li>• Unit III – Fed Fast Cycle, Gastric residual volume, Circadian rhythm in human health.</li> </ul>



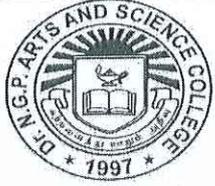
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		<ul style="list-style-type: none"> <li>Unit IV - Renal Threshold for glucose, Glomerular filtration rate.</li> <li>Unit V - Hypothalamus and its role in various body functions- obesity, sleep, and memory.</li> </ul>
25FNP2CC	<b>Core:</b> Therapeutic Nutrition – Lifestyle Disorders	Mrs. C. Vandhana suggested to include the following experiments as it is vital for designing evidence-based nutritional strategies and therapeutic diets that facilitate effective disease management: <ul style="list-style-type: none"> <li>Deliberation on formulating nutrient requirement strategies for Enteral and Parenteral Nutrition.</li> <li>The development of F-75, F-100 and ready to use therapeutic feeds (RUTF) for addressing Severe Acute Malnutrition.</li> </ul>
25FNP2CD	<b>Core:</b> Research Methodology and Statistics	Dr. Subbarao M. Gavaravarappu suggested to include the concepts of Different plagiarism softwares - Turnitin and Drillbit and Different citation softwares – Mendeley Desktop and Zotero in Unit – IV as it is important to promote academic integrity, ensure originality in research and support accurate referencing in scholarly writing.
25CAP2EA	<b>EDC:</b> Computer Application in Nutrition	Dr. Radha R suggested to include the application software like MyPlate and DietCal in Unit - III as these tools facilitating evidence-based decision-making in dietary pattern and personalized nutrition interventions for improved health outcomes.
25FNP2CP	<b>Core Practical:</b> Food Analytical Techniques	Dr. Radha R suggested to include the following experiments as it is essential for understanding the composition, nutritional quality and functional properties of foods. <ul style="list-style-type: none"> <li>Determination of Amylose</li> <li>Estimation of amino acid by Sorenson's Formaldehyde Titration method</li> </ul>
25FNP2CQ	<b>Core Practical:</b> Therapeutic Nutrition – Lifestyle Disorders	Mrs. C. Vandhana suggested to include the following experiments as it is vital for accurately assessing dietary intake and determining nutritional requirements for effective nutritional care planning and patient management: <ul style="list-style-type: none"> <li>Preparation of a Ready – Reckoner for calculating portion volume, conversion of cooked to raw equivalent and nutrient content of various foods.</li> <li>Nutritional Assessment and Reassessment of a patient.</li> <li>Using different Malnutrition assessment tools-SGA, MUST, MNA for nutrition assessment.</li> </ul>



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<b>25FNP2DR</b>	<b>DSE Practical:</b> Harvest Technology of Agricultural Produce	The Board members resolved to adopt and retain the existing syllabus after discussion
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### New Courses (PG):

<b>25FNP2DP</b>	<b>DSE Practical:</b> Food Product Development	The course was introduced to equip students with the skills to design sustainable, innovative, and value-added food products and foster entrepreneurship in the modern food industry.
<b>25FNP2DQ</b>	<b>DSE Practical:</b> Functional Foods	The course was introduced to help students gain a scientific understanding of functional food development by incorporation of bioactive ingredients and to design, evaluate and commercialize evidence-based functional food products.

After discussion the following resolution was passed.

### Resolution:

**Resolved to approve the above modification and adopt the revised syllabus for UG & PG students admitted for the academic year 2025-26.**

*Item 20.3: To consider and approve the syllabi for IV semester for the students admitted in UG and PG during the academic year 2024-2025.*

The chairman presented the detailed scheme and Regulation for the students admitted in UG and PG from the academic year 2024-2025 and syllabi for the IV semester. The members deliberated in detail about the modification required.

After discussion it is unanimously decided to adopt the following changes.

### Changes Made:

#### UG

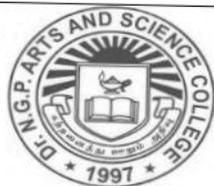
Course Code	Course	Reason
<b>24FNU4CA</b>	<b>Core:</b> Dietetics	<p>Mrs. C. Vandhana suggested to include the following topics as it equips students with the expertise to develop and apply specialized nutritional strategies that enhance patient care in clinical and critical care.</p> <ul style="list-style-type: none"> <li>• Unit I – Special Feeding Methods</li> <li>• Unit II – Respiratory diseases – Bronchitis, asthma, COPD</li> </ul>

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		<ul style="list-style-type: none"> <li>Unit IV - Dietary principles (GI, GL, CHO counting)</li> <li>Unit V - Critical Conditions: Burns, trauma and neurological conditions</li> </ul>
<b>24FNU4CB</b>	<b>Core:</b> Perspective Psychology	Dr. Radha R suggested to include the concepts of self-motivation, self-management, self-esteem and critical thinking in Unit – III as they help nutritionists to evaluate perceptions of food consumption, and promote sustainable lifestyle changes through effective and personalized nutrition counselling.
<b>24FNU4CP</b>	<b>Core Practical:</b> Dietetics	<p>Dr. Subbarao M. Gavaravarappu suggested to include the following the experiments to understand the nutritional requirements and dietary strategies essential for effective management of renal disorders and to reduce the associated complications.</p> <ul style="list-style-type: none"> <li>Planning and preparation of diet for dialysis</li> <li>Planning and preparation of diet for renal failure</li> </ul> <p><b>Experiments under DBT:</b></p> <ol style="list-style-type: none"> <li>Low-FODMAP Diet Planning for IBS (irritable bowel syndrome)</li> <li>Enteral Nutrition: Planning Tube Feeding Formulas</li> </ol>
<b>24FNU4SA</b>	<b>SEC:</b> Functional Foods	The Board members resolved to adopt and retain the existing syllabus after discussion.

**PG:**

Course Code	Course	Reason
<b>24FNP34A</b>	<b>Core:</b> Public Health Nutrition	The Board members resolved to adopt and retain the existing syllabus after discussion
<b>24FNP4CB</b>	<b>Core:</b> Food Safety and Quality Management	<p>As per the suggestion of board members:</p> <ul style="list-style-type: none"> <li>The topic - Role of AI and digital technologies in food safety monitoring in Unit – IV was included as it plays a crucial role in improving accuracy, efficiency, and real-time hazard detection, ensuring public health.</li> <li>The concept of food fraud and adulteration detection in Unit – V was included as it is crucial to ensure food authenticity, protect public health, and uphold consumer trust through accurate identification of contamination.</li> </ul>



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24FNP4DP	<b>DSE Practical:</b> Food Quality Control	The Board members resolved to adopt and retain the existing syllabus after discussion.
24FNP4DQ	<b>DSE Practical:</b> Nutrition in Health	Mrs. C. Vandhana suggested to include the following experiment as it is important to ensure balanced nutrient intake that supports overall health, optimal performance, and recovery without excessive energy intake. <ul style="list-style-type: none"><li>• Menu planning and preparation for non-endurance activity.</li></ul>
24FNP4DR	<b>DSE Practical:</b> Food Fermentation Techniques	The Board members resolved to adopt and retain the existing syllabus after discussion.

After discussion the following resolution was passed.

### Resolution:

**Resolved to approve the above modification and adopt the revised syllabus for UG & PG students admitted for the academic year 2024-25.**

**Item 20.4:** *To consider and approve the syllabi for VI semester for the students admitted in UG during the academic year 2023-2024.*

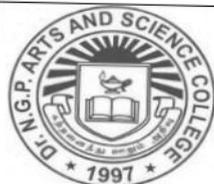
The chairman presented the detailed scheme and Regulation for the students admitted in UG from the academic year 2023-2024 and syllabus for the VI semester. The members deliberated in detail about the modification required.

### Changes Made:

#### UG:

Course Code	Course	Reason
233FN1A6CA	<b>Core:</b> Community Nutrition	The Board members resolved to adopt and retain the existing syllabus after discussion
233FN1A6CA	<b>Core:</b> Food Product Development and Marketing	The topic - Application of AI in the development of food labeling systems in Unit – IV to improve the precision, clarity and effectiveness of presenting nutritional and safety information. As per the suggestion of academic council we've included the concept of Regulatory Compliance and





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		food safety standards - FSSAI, FDA, HACCP, International and national packaging standards, Complaint Filing Mechanisms (FSSAI Portal, Food Safety Connect App, E-Daakhil Portal) as it is essential for raising awareness, ensuring regulatory compliance, and maintaining product shelf life.
233FN1A6CP	<b>Core Practical:</b> Food Product Development and Marketing	Dr. Radha R Suggested to include the following experiment as it is crucial for assuring food safety, preserving product quality and prolonged shelf life. <ul style="list-style-type: none"> <li>Product stability and shelf-life testing (moisture and water activity)</li> </ul> <b>Experiments under DBT:</b> <ol style="list-style-type: none"> <li>Reduction of sugar in confectionery using natural sweeteners</li> <li>Formulation of fermented foods</li> </ol>
233FN1A6SA	<b>SEC:</b> Indigenous Foods	The Board members resolved to adopt and retain the existing syllabus after discussion
233FN1A6DB	<b>DSE:</b> Nutrition Care Process	Dr. Subbarao M. Gavaravarappu suggested to include case study approaches for diabetes mellitus, cancer, gastrointestinal diseases, and pancreatic diseases as it is essential to understand individual variations in disease progression, treatment response, and nutritional management
233FN1A6DC	<b>DSE:</b> Unit Operations in Food Industry	The Board members resolved to adopt and retain the existing syllabus after discussion.
233FN1A6DD	<b>DSE:</b> Basics of Food Packaging	As per the academic council members suggestion we've included the following concepts as it is essential for raising awareness and maintaining product shelf life: <ul style="list-style-type: none"> <li>Unit IV – Sustainable Packaging</li> </ul>
233FN1A6DE	<b>DSE:</b> Diet Counseling	Mrs. C. Vandhana suggested to include the concepts of Lifestyle counseling and preventive nutrition in Unit III, as it is important to equip dieticians with the knowledge and skills to promote healthy habits, prevent lifestyle-related diseases.
233FN1A6DF	<b>DSE:</b> Entrepreneurship In Food Industry	The Board members resolved to adopt and retain the existing syllabus after discussion



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### New Courses (UG):

233FN1A6 DA	<b>DSE:</b> Food Handling and Storage	The course is introduced as it is fundamental to safeguarding food safety, minimizing microbial contamination and spoilage, and preserving the nutritional integrity and sensory attributes of foods during processing, storage, and distribution.
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After discussion it is unanimously decided to adopt the following changes.

#### Resolution:

**Resolved to approve the above modification and adopt the revised syllabus for UG students admitted for the academic year 2023-24.**

**Item 20.5:** *To consider and approve the syllabi for Skill oriented courses to be offered during the academic year 2025-26.*

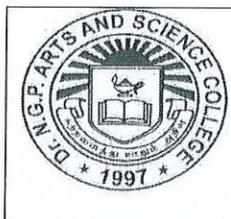
The chairman presented the detailed scheme for Skill oriented course – Sports Nutrition to be offered the students admitted from the academic year 2025-26 onwards. The members deliberated in detail about the modification required. After discussion it is unanimously decided to adopt the following changes.

#### Resolution:

**Resolved to retain the existing syllabus of 2023-24 batch without any modification for the students admitted from the academic year 2025-26.**

**Item 20.6:** *To consider and approve the panel of examiners for conducting of End Semester Practical's examination, Central Valuation and Question Paper Setting.*

The chairman presented the detailed the panel of examiners for conducting of End Semester Practical's examination, Central Valuation and Question Paper Setting. The members deliberated in detail about the modification required. After discussion it is unanimously decided to adopt the following changes.



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### Resolution:

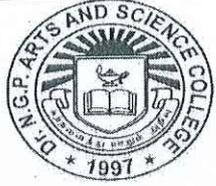
**Resolved to retain the existing panel of 2024-25 batch without any Modification for the students admitted from the academic year 2025-26.**

Finally, the Chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by Dr. D. Sridevi, Head & Chairman – Food Science and Nutrition.

Date: 10.11.2025

(Dr. D. SRIDEVI)

**BoS Chairman/HoD  
Department of Food Science & Nutrition  
Dr. N. G. P. Arts and Science College  
Coimbatore - 641 048**



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### ATTENDANCE OF THE TWENTIETH BOARD OF STUDIES MEETING

Faculty: Biosciences

Board: Food Science and Nutrition

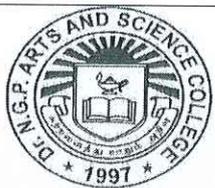
Date : 10/11/2025

Time : 10.00 a.m.

Venue : Department of Food Science and Nutrition

The following members were present for the Board of Studies meeting

S. No	Name	Designation	Signature
1.	Dr. D. Sridevi Professor and Head	Chairman	PRESENT
2.	Dr. Subbarao M. Gavaravarapu Scientist 'F' & Head Dept. of Nutrition Information Communication & Health Education (Niche) ICMR - National Institute of Nutrition	University Nominee	PRESENT
3.	Dr. R. Radha Associate Professor Dept. of Food Service Management and Dietetics Avinashilingam University	Subject Expert	PRESENT
4.	Dr. Suresh D Sakhare Sr. Principal Scientist & Head Dept. of Flour Milling and Baking Technology CFTRI	Subject Expert	ABSENT
5.	Mrs. C. Vandhana Chief Dietitian Ramakrishna Hospitals	Industrial expert	PRESENT
6.	Ms. Shobana Priya N Dietitian Progen Weight Management	Alumni	PRESENT
7.	Ms. S. Neha III B.Sc. FSN	Student Representatives	ABSENT
	Ms. J. Fasiha II M.Sc. FN		PRESENT



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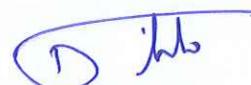
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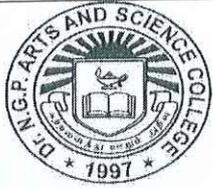
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8.	Part I (Language I) Dr. N. Kuppuchamy Associate Professor and Head Department of Tamil	Co-opted member	PRESENT
9.	Part II (Language II) Dr. A. Hazel Verbina Professor and Head Department of English	Co-opted member	PRESENT
10.	Allied - IDC- Applied Chemistry Dr. R. Ravikumar Associate Professor and Head (i/c) Department of Chemistry	Co-opted member	PRESENT
11.	Allied – IDC - Biochemistry Dr. S. Gowri Professor and Head Department of Chemistry	Co-opted member	PRESENT
12.	Dr. Meera Raman Professor	Internal Member	PRESENT
13.	Ms. Anjali M Assistant Professor	Internal Member	PRESENT
14.	Dr. D. Jancy Rani Assistant Professor	Internal Member	PRESENT
15.	Ms. M. Rakeshwari Assistant Professor	Internal Member	ABSENT
16.	Ms. G. Priyaalini Assistant Professor	Internal Member	PRESENT
17.	Dr. Priya A Assistant Professor	Internal Member	PRESENT
18.	Ms. Kanishka B Assistant Professor	Internal Member	PRESENT
20.	Mrs. G. Latha Assistant Professor	Internal Member	PRESENT
20.	Ms. Adithya A V Assistant Professor	Internal Member	PRESENT
21.	Ms. Nirmala K Assistant Professor	Internal Member	PRESENT

Date: 10.11.2025

  
(Dr. D. Sridevi)

BoS Chairman/HoD  
Department of Food Science & Nutrition  
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## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

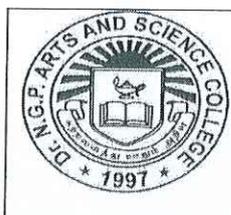
Course Code/ Name: 25FNU2CA / PRINCIPLES OF NUTRITION

Unit	Existing	Changes
I	Energy History of nutrition, Nutrition research in India. Definition of Energy and its unit (Calorie and Joule). Energy Metabolism- Direct and Indirect calorimetry, Determination of energy value of food Bomb calorimeter, Thermic effect of food- definition and factors affecting, Physiological fuel value of food. Basal Metabolic rate Definition, measurement- direct and indirect method and determinants of BMR. Recommended Dietary Allowances for energy.	<b>Introduction to Nutrition and Energy-</b> Definition – Nutrition, Health, Nutrients, Nutritional Status-Optimal nutrition, Undernutrition, and Overnutrition. Classification of nutrients and its functions. Benedicts Oxy Calorimeter. Difference between Physiological fuel value of food and gross value of food. Determinants of energy requirement of body. Components of energy expenditure- Basal Metabolic Rate (BMR), and Physical Activity. Effect of Food (Specific Dynamic Action).
II	Carbohydrate, Fat and Lipid. Carbohydrates - Classification, functions, digestion, absorption, metabolism, utilization, deficiency, sources and requirements. Dietary fiber Definition, Types and sources, Role of fiber in human health. Fats and Lipids Classification, functions, digestion, absorption, metabolism, sources and requirements, types and sources of fatty acids.	Essential fatty acids- Classification, types, functions, RDA, sources, and deficiency. <b>Dietary fiber-</b> components, functions, RDA, and importance of fiber in human health.
III	Proteins - Classification, functions, digestion, absorption, metabolism, utilization, deficiency, sources and requirements. Evaluation of protein quality-PER, BV and NPU, Digestibility Coefficient, Reference protein. Amino acids Essential amino acids and non-Essential amino acids	NPR Semi-essential amino acids
IV	Vitamins-Classification and functions of vitamins in the body Fat soluble vitamins - Functions, absorption, metabolism, sources, requirements, deficiency and toxicity of Vitamin A, D, E and K. Water Soluble Vitamins - Functions, sources, absorption, metabolism, requirements, deficiency and toxicity of B Complex Vitamins (Thiamine, Riboflavin, Niacin, Pyridoxine, Folic Acid, Pantothenic acid) and Vitamin C. Amygdalin (Vitamin B17) Sources and significance	Cyanocobalamin, Biotin
V	Minerals Classification and Functions Micro minerals (Iron and Iodine - absorption and metabolism, Zinc, Copper, Fluorine) -Functions, sources, requirements, deficiency and toxicity. Macro minerals (Calcium, Phosphorus and Magnesium)-Functions, absorption, metabolism, sources, requirements, deficiency and toxicity. Water-Distribution, functions, requirements and sources of water, water depletion and intoxication, maintenance of water and electrolyte balance. Electrolytes (Sodium, Potassium and Chloride)-Functions and sources.	<b>Macro minerals</b> - Sodium, Potassium <b>Microminerals-</b> Selenium and Molybdenum <b>Water-</b> Distribution of body fluids (ICF and ECF, IF, TCF), Role of hormones in water and electrolyte balance.

PERCENTAGE OF SYLLABUS REVISED: 40%

COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)		Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision – Practical Course B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

Course Code/ Name: 25FNU2CP / QUANTITATIVE NUTRIENT ANALYSIS

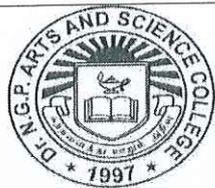
Exp. No.	Existing	Changes
1.	Determination of moisture content and mode of operation technique of Hot air oven and microwave oven	-
2.	Determination of gluten content of wheat flour	-
3.	Gelatinization and microscopic examination of starches from different sources.	Determination of starch gelatinization temperature and swelling capacity.
4.	Estimation of pH in various fruit juices	-
5.	Estimation of Titratable Acidity in Lemon juice	-
6.	Determination of Ash content in Millets	-
7.	Estimation of Iron content in given food sample	-
8.	Estimation of phosphorus content in food items	-
9.	Estimation of ascorbic acid (Vitamin C) in citrus fruits	-
10.	Determination of Smoking Point of Fat.	-
11.	Determination of oil content in baked food products	Determination of Total Soluble Solids (TSS) using Refractometer
12.	Estimation of Crude Fiber content in food	-
13.	Effect of pH and water on plant pigments	Estimation of protein content by Lowry's method
14.	Estimation of rancidity and saponification value in oil	-

**Note:** Out of 12 – 10 mandatory

**PERCENTAGE OF SYLLABUS REVISED: 30%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)		Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

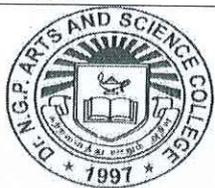
Course Code/ Name: 25FNP2CA / MACRONUTRIENTS

Unit	Existing	Changes
I	<b>Energy</b> Energy - Definition, Units, Components of energy requirement, Determination of Energy Value of Food, Total energy Requirement, Basal Metabolic Rate and its measurements, Factors Affecting Basal Metabolic Rate, Thermic Effect of food, Factors Affecting Energy requirement during work, Resting Energy Expenditure, TEE, Specific dynamic actions, Recommended Dietary Allowances, Deficiency	Harri's Benedict Equation and Physical activity. Factors influencing energy input- hunger, appetite, and choice of food. Factors influencing energy output-age, gender, BMR, and physical activity. Direct and Indirect Calorimeter, Sources, Deficiency - MAM, SAM, Relative Energy Deficiency in Sport (RED-S).
II	<b>Carbohydrates</b> Carbohydrates- Classification, Functions, Digestion, Absorption, Metabolism, Maintenance of Blood Glucose Levels, Hormonal control of blood sugar levels, Glycemic index-factors affecting GI of foods, Dietary Fiber- Classification of dietary fiber, physiological and metabolic effects of fiber, role of fiber in the prevention of disease. Recommended dietary allowances and sources.	transport, utilization, and storage. Hormonal regulation of blood glucose. Appetite/satiety and weight control types of fiber sources.
III	<b>Proteins</b> Proteins and Amino acids – Functions, classification, sources, Digestion, absorption, metabolism, utilization and factors affecting, storage, assessment of quality of proteins, complimentary and supplementary value of proteins and requirements. Factorial estimation for arriving at RDA of proteins for Indians, Deficiency	transport, Protein synthesis and turnover. RDA
IV	<b>Lipids</b> Lipids- Classification, Fats in the Body and Food, Functions, Digestion and Absorption, Transport and Metabolism, Essential Fatty Acids, Brown Fat Thermogenesis, Therapeutic Inhibition of Fat Absorption and Sources. Fatty acid-types, Functions, requirements, Food source and deficiency	utilization and storage. Essential Fatty Acids - types, Functions, requirements, sources and deficiency
V	<b>Water and Electrolytes</b> Water- Definition, Distribution, Functions, Water Balance, Maintenance of Fluid/Water Balance, Water Depletion, Water Excess (Water Intoxication); Distribution of Electrolytes, Maintenance of Electrolyte balance, Acid Base Balance- The Control of Hydrogen Ion Concentration, Acid Base Buffers, Respiratory Regulation of pH, Renal Regulation of pH.	Factors affecting water balance. Electrolytes - Distribution, Functions, Absorption, Transport and Electrolyte balance. Factors affecting electrolyte balance. CO <sub>2</sub> transport, Chloride Shift, Respiratory Quotient

PERCENTAGE OF SYLLABUS REVISED: 45%

COURSE FOCUSES ON:

✓	Skill Development	Entrepreneurial Development
✓	Employability	Gender Sensitization
	Intellectual Property Rights (IPR)	Innovations
	Social awareness / Environment	Constitutional Rights/Human Values/Ethics



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## Syllabus Revision M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

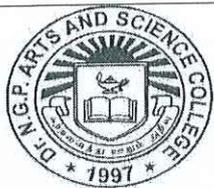
Course Code/ Name: 25FNP2CB / APPLIED PHYSIOLOGY

Unit	Contents
I	<p><b>Circulation:</b>  <b>Blood</b> – Component and structure of blood, Haemoglobin- structure and function. Disorders –Leukemia, hemophilia. (Types, causes and symptoms), Haemopoiesis, Blood clotting mechanism.  <b>Heart</b> - Structure and functions of heart, cardiac cycle, cardiac output, ECG and its significance. Medical device for the regulation of cardiac rhythm (Pace maker).  <b>Activity:</b> Recording and Interpretation of a Basic ECG Pattern</p>
II	<p><b>Immunology</b>-Types of immunity - Innate immunity and Acquired immunity, immune cells, Immune responses -Cell mediated and Humoral immunity, antigen - antibody reactions, hypersensitivity and auto-immunity.  <b>Enzyme</b>-classification, functions, Mechanism of enzyme action, Enzyme activation, role of enzymes in CHO, protein and lipid digestion, factors affecting enzyme activity. Enzymes in medical diagnosis (Liver, heart, muscle, skeletal disorders and cancer).  <b>Activity:</b> Interpretation of Diagnostic Enzyme Levels in Clinical Conditions</p>
III	<p><b>Digestive System</b>- Structure and functions of digestive system, Regulation of gastric secretion, motility and emptying, associated organ for digestion (liver, gall bladder, bile and pancreas) in digestion. Regulation of food intake –hunger, appetite and satiety, Fed Fast Cycle. Gastric function test and Gastric residual volume). Circadian rhythm - Circadian rhythm in human health.  <b>Endocrine glands</b>- Physiological functions, hormones and abnormalities in secretion of Pituitary (anterior and posterior), Thyroid, Parathyroid, thymus, Adrenal and pineal gland. Pancreas gland and Gonads.  <b>Activity:</b> Design a 24-Hour Body Clock &amp; Hormone–Digestion Interaction Map</p>
IV	<p><b>Respiratory System</b> – Structure and functions, mechanism of respiration. Disorders of respiration – Dyspnea, Hypo and Hyperventilation, Respiratory distress syndrome, cystic fibrosis, Hypoxia and Asphyxia. (Definition causes and symptoms)  <b>Reproductive and Excretory System</b>- structure and hormonal secretion of male and female reproductive system, Structure and function of Nephron, process of urine formation, composition of urine, Normal and abnormal constituents of urine, Renal function test, Renal Threshold for glucose, Glomerular filtration rate  <b>Activity:</b> Measure the Breathing Rate of the participant and Compare with Normal Values</p>
V	<p><b>Sensory – Motor skills</b>  <b>Sense Organs:</b> structure and functions of skin, eye, ear and tongue-taste receptor. <b>Musculo-Skeletal System</b> - structure and function of bone, cartilage and connective tissue. Types of muscles, structure and function.  <b>Nervous system</b> – structure and function of brain and spinal cord, neuron, synapse, afferent and efferent nerves, Reflex action, CSF. Role of neurotransmitters. Hypothalamus and its role in various body functions- obesity, sleep, and memory.  <b>Activity:</b> Identify and label any 10 major bones on a human skeleton diagram and write one function for each bone.</p>

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development	Entrepreneurial Development
✓	Employability	Gender Sensitization
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## Syllabus Revision M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

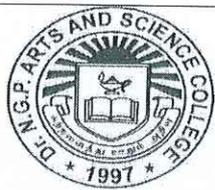
Course Code/ Name: 25FNP2CC / THERAPEUTIC NUTRITION – LIFESTYLE DISORDERS

Unit	Content
I	<b>Introduction to Therapeutic Nutrition</b> Therapeutic nutrition - definition. Indications of therapeutic diet requirement. Hospital diets and progressive modifications. Modifications of a normal diet during illness and convalescence. Determining nutrient requirements for hospitalized patients (Mifflin St. Jeor equation). Fluid requirements for hospitalized patients (Body Weight-Based Formula, Age-Based Holliday-Segar Method, Energy-Based Method). Nutrition Care Process and documentation.
II	<b>Nutrition support – Special Feeding Methods</b> Enteral nutrition: Rationale and Criteria for Appropriate Nutritional Support. Enteral Access and Administration. Enteral Formula Composition and Selection. Monitoring and Complications. Parenteral nutrition: Indications and Benefits. Parenteral Access and Administration. Parenteral Formulations. Monitoring and Complications. Transitional feeding.
III	<b>Diet for Energy Imbalance</b> Energy balance - Energy Intake Vs Energy Expenditure. Underweight - classification, symptoms, causes, dietary management. SAM – definition, signs, factors responsible for SAM and Nutrition therapy. Overweight and obesity - types, causes, theories of obesity. BMI Classification for Asians. Diagnostic parameters - WC, WHR, Body Fat %, Visceral Fat. Dietary principles and management in Overweight and Obesity. Maintenance diet.
IV	<b>Diet for Diabetes Mellitus</b> Factors predisposing to diabetes. Normal blood glucose levels – FBG, PPBG, RBG. Classification, symptoms, and causes of diabetes. Tests for diabetes - OGTT, HbA <sub>1c</sub> . Diagnostic criteria for prediabetes and diabetes. Complications of diabetes - acute and chronic. GI, GL and Carbohydrate counting. Dietary principles and management in Type 1 DM, Type 2 DM and GDM. Methods of treatment – Diet Alone, Diet and oral hypoglycemic drugs, and Diet and insulin therapy. Patient Education and lifestyle management.
V	<b>Diet for Cardiovascular Diseases</b> Types of Cardiac Disorders, multiple risk factors in cardiovascular diseases. Hypertension, hyperlipidemia - causes, symptoms and classification. Role of fats in the development of atherosclerosis. Dietary management of hypertension, hyperlipidemia and atherosclerosis - principles of diet, foods to be included and avoided. Congestive Heart Failure – causes, symptoms, stages and dietary management.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development		Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

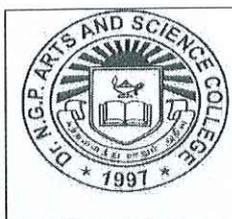
Course Code/ Name: 25FNP2CD / RESEARCH METHODOLOGY AND STATISTICS

Unit	Existing	Changes
I	Fundamentals of Research: Meaning of research, objectives of research, types of research <b>and their application</b> , selection and formulation of research problems- hypothesis, research design, sampling methods — random sampling methods and non-random sampling methods, <b>sampling errors &amp; sample size calculation.</b>	Types of study design – cross sectional study, Cohort study, Cross sectional study, Randomized Controlled trials, Quasi experimental study and meta-analysis.
II	Primary Data collection methods - Questionnaire, schedule method, interview method, case study method & experimentation method, secondary data – sources and precautions while using secondary data. Editing and Coding the Data Organization of Data - classification of data, formation of discrete and continuous frequency distribution, tabulation - role, general rules of tabulation, types of tables.	Observation Difference between schedule and questionnaire
III	Representation of Data - Diagrammatic and graphical representation - significance of diagrams, graphs and charts- general rules for constructing diagrams - <b>types of diagrams.</b> Interpretation and Report Writing - Meaning of interpretation and precautions, Format of thesis writing - front page, main text, bibliographical citations and appendices. Publishing the research work - writing of abstract and article- content, style, grammar, reference citation. Plagiarism - Definition, types, importance and examples of plagiarism.	Different Plagiarism Software
IV	Measures of Central Tendency Measures of Central Tendency - Mean, median, mode, their relative advantages and disadvantages. Measures of dispersion — mean, standard deviation, quartile deviation. Co-efficient of variation, percentile and percentile ranks. Association of attributes and contingency tables.	Mean- (arithmetic, geometric and harmonic) Mode - Definition, formula calculation, difference
V	Tests of significance: Tests of significance — <del>large and small sample-</del> t' and F' test, <del>tests for independence using chi-square test.</del> Analysis of variance- one-way and two-way classifications, Correlation, coefficient of correlation and its interpretation, rank correlation, regression equations and predictions	Chi-square – condition for the application of $\chi^2$ . steps involved in applying $\chi^2$ and calculation, important characteristics and caution in using $\chi^2$ . Correlation - coefficient of correlation and rank correlation calculation and its interpretation. t- test and F test Analysis of variance (One way and Two way) – introduction, basic principle and calculation

PERCENTAGE OF SYLLABUS REVISED: 25 %

COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
	Social awareness / Environment	✓	Constitutional Rights/Human Values/Ethics



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## Syllabus Revision M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

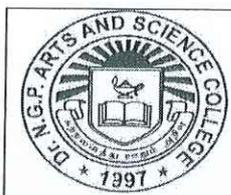
Course Code/ Name: 25FNP2EA / COMPUTER APPLICATION IN NUTRITION

Unit	Contents
I	<b>Basics of computer applications in nutrition</b> Introduction to computers: hardware, software, types of computers, and operating systems. Computer applications in nutrition: overview of applications in dietary assessment, meal planning, and research.
II	<b>Dietary assessment and analysis tools</b> Software for dietary analysis: introduction to applications like NutriSurvey, FoodWorks, and MyFitnessPal. Data collection and entry: methods for inputting and managing dietary data.
III	<b>Data analysis and statistical tools in nutrition</b> Data analysis techniques: descriptive and inferential statistics in nutrition research. Introduction to statistical software: overview of SPSS, and R.
IV	<b>Diet planning and nutrient tracking applications</b> Diet planning tools: introduction to software like DietCal, Cronometer, and MyPlate. Mobile applications for nutrient tracking: pros and cons of mobile-based applications in dietary assessment.
V	<b>Ethics, privacy, and future trends in nutrition technology</b> Ethical use of nutrition technology: issues related to data privacy and informed consent. Future of digital health in nutrition: wearables, AI, and predictive analytics in personalized nutrition.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
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### Syllabus Revision – Practical Course M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

Course Code/ Name: 25FNP2CP / FOOD ANALYTICAL TECHNIQUES

Exp. No.	Experiments
1.	Determination of Amylose
2.	Estimation of amino acid by Sorenson's Formaldehyde Titration method
3.	Determination of Iodine number and peroxide value of oil
4.	Determination of Saponification Number and Acid Number
5.	Different Extraction methods in plant sample
6.	Estimation of total phenol content present in fresh fruits
7.	Determination of Flavonoids content
8.	Estimation of curcumin in turmeric
9.	Estimation of capsaicin in calorimetric method
10.	Determination of Tannin content
11.	Determination of trypsin inhibitor in pulses
12.	Determination of phytic acid in millets

**Note:** Out of 12 – 10 mandatory

**PERCENTAGE OF SYLLABUS REVISED: 100%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)	✓	Innovations
	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision – Practical Course M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

Course Code/ Name: 25FNP2CQ / THERAPEUTIC NUTRITION – LIFESTYLE DISORDERS

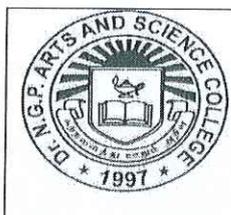
Exp. No.	Contents
1.	Preparation of a Ready – Reckoner for calculating portion volume, conversion of cooked to raw equivalent and nutrient content of various foods.
2.	Nutritional Assessment and Reassessment of a patient.
3.	Using different Malnutrition assessment tools-SGA, MUST, MNA for nutrition assessment.
4.	Planning of liquid diet, soft diet, and bland diet.
5.	Preparation of blenderized enteral nutrition feeds.
6.	Assessing requirements and planning diet for underweight and obese patient.
7.	Assessing requirements and planning diet for Type I Diabetes Mellitus.
8.	Assessing requirements and planning diet for patients with Type II Diabetes Mellitus.
9.	Assessing requirements and planning diet for patients with Gestational Diabetes Mellitus.
10.	Assessing requirements and planning diet for a patient with Hypertension.
11.	Assessing requirements and planning diet for Hyperlipidemia condition.
12.	Assessing requirements and planning diet for SAM.

**Note:** Out of 12 – 10 mandatory

**PERCENTAGE OF SYLLABUS REVISED: 100%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)	✓	Innovations
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### Syllabus Revision – Practical Course M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

Course Code/ Name: 25FNP2DP / FOOD PRODUCT DEVELOPMENT

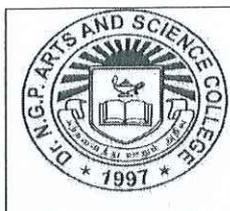
Exp. No.	Contents
1.	Brainstorm innovative product ideas and prepare a concept note.
2.	Develop a basic prototype recipe for the selected product idea.
3.	Develop the recipe with multiple trials to finalize formulation.
4.	Conduct sensory evaluation using scorecards or hedonic scale.
5.	Calculate the nutritive value using Indian food composition table.
6.	Determine appropriate portion size and suggested daily intake.
7.	Estimate raw material cost, per serving cost and fix Suggested Retail Price (SRP).
8.	Design a basic food label including nutrition facts and ingredients.
9.	Observe and record shelf-life changes of the developed product.
10.	Demonstrate suitable packaging material and techniques.
11.	Final presentation of product with label, costing
12.	Prepare marketing posters, brochures, or social media ads.

**Note:** Out of 12 – 10 mandatory

**PERCENTAGE OF SYLLABUS REVISED: 100%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision – Practical Course M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: II

Course Code/ Name: 25FNP2DQ / FUNCTIONAL FOODS

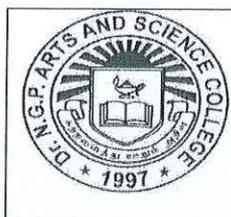
Exp. No.	Experiments
1.	Formulation of High-Fiber Functional Biscuits.
2.	Preparation of Probiotic Yogurt and enumeration of viable probiotic count.
3.	Development of Omega-3 Enriched Snack Bars.
4.	Formulation of Plant-Based Dairy Alternatives (e.g., soy or almond milk).
5.	Development of Gluten-Free Functional Bread using pseudocereals.
6.	Preparation of Fortified Functional Beverages using herbal extracts or micronutrients.
7.	Extraction and Characterization of Dietary Fiber from functional food sources.
8.	Use of Prebiotic Ingredients (inulin, FOS) in functional food formulations.
9.	Preparation of flavonoid rich food product from fruit extracts.
10.	Formulation of lycopene rich beverages.
11.	Labelling and Nutritional Claims analysis for functional food products as per FSSAI regulations.
12.	Sensory Evaluation of functional food products using 9-point hedonic scale

**Note:** Out of 12 – 10 mandatory

**PERCENTAGE OF SYLLABUS REVISED: 100%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: IV

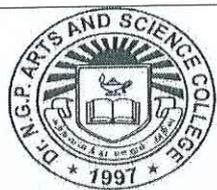
Course Code/ Name: 24FNU4CA / DIETETICS

Unit	Existing	Changes
I	<b>Introduction to Dietetics</b> Definition of Nutrition and Dietetics; Dietitian roles and responsibilities, ethics in dietary practice. Exchange list system - menu plan using exchange list. Hospital diets- Liquid diet, soft diet, bland diet, pureed diet, enteral nutrition and parenteral nutrition. Energy imbalance - High and low-calorie diets.	Introduction to Diet Therapy: Scope, objectives, principles and goals. Role of the Dietitian: Types (clinical, sports, community and research), roles, duties, code of ethics, Indian Dietetic Association. Therapeutic Diets: Routine hospital diets - clear fluid, full fluid, soft, bland and regular diet. Special Feeding Methods: Define enteral and parenteral nutrition - types, role in various disease conditions
II	<b>Gastrointestinal, liver and Febrile conditions</b> Gastrointestinal diseases - Introduction, causes, symptoms, dietary management of diarrhea, constipation, peptic ulcer. Liver diseases - Introduction, causes, symptoms, dietary management of viral hepatitis, cirrhosis. Febrile conditions- Introduction, causes, symptoms, dietary management of typhoid, tuberculosis, and dengue.	Energy Imbalance: Obesity: Etiology, risk factors, clinical assessment, complications, dietary and lifestyle management. Underweight: Causes, symptoms and dietary management. Diet in Febrile Conditions: Typhoid, tuberculosis, malaria, influenza, COVID-19 - etiology, symptoms, nutritional needs, and dietary modifications. Respiratory Diseases: Bronchitis, Asthma, COPD - types, causes, symptoms, and nutritional management.
III	<b>Diabetes and Renal diseases</b> Diabetes mellitus - classification, causes, symptoms, diagnosis (FBS, RBS, PPBS, HbA1C), dietary management of Type 1, Type 2 and Gestational diabetes mellitus. Basics of glycemic index, glycemic load and carbohydrate counting. Renal diseases - Introduction, causes, symptoms, dietary management of nephritis, nephrotic syndrome, renal calculi, and chronic kidney disease. Dialysis - types, nutritional considerations in hemodialysis and peritoneal dialysis.	Gastrointestinal Disorders: GERD, peptic ulcer, diarrhea, constipation, hiatus hernia. IBS, IBD - causes, clinical features, treatment, and dietary management. Liver and Gallbladder Disorders: Hepatitis, jaundice, cirrhosis, hepatic coma, cholecystitis, cholelithiasis - etiology, symptoms and dietary principles. Renal Disorders: Nephritis, nephrotic syndrome, acute/chronic renal failure, dialysis nutrition, nephrolithiasis - symptoms, dietary management.
IV	<b>Cardiovascular diseases</b> Cardiovascular diseases - Risk factors, role of fat and cholesterol. Introduction, causes, symptoms, dietary management of hypertension, atherosclerosis. Hyperlipidemia - definition, lipid parameters, causes, symptoms, dietary management.	Cardiovascular Diseases: Hypertension, atherosclerosis, myocardial infarction, CHF - risk factors, symptoms, prevention, and dietary management. Diabetes Mellitus: Types (Type 1, Type 2, GDM), symptoms, diagnosis, dietary principles (GI, GL, CHO counting), insulin, oral hypoglycemic drugs, complications, nutritional requirements and dietary management.
V	<b>Cancer and Food Intolerance</b> Cancer - common sites of cancer, development of cancer. Breast cancer, Colon Cancer, Oral cancer, Hepatocellular carcinoma - causes, symptoms, and dietary management of cancer. Role of diet in prevention of cancer. Feeding problems related to cancer therapy.	Cancer: Types, nutritional implications, diet modification during therapy, role of antioxidants and functional foods. Food Allergy and Intolerance: Definition, Common allergens, symptoms, diagnosis, dietary exclusions. Critical Conditions: Burns, trauma and neurological conditions (epilepsy, seizures).

PERCENTAGE OF SYLLABUS REVISED: 50%

COURSE FOCUSES ON:

✓	Skill Development		Entrepreneurial Development
	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)	✓	Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: IV

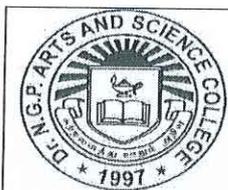
Course Code/ Name: 24FNU4CB / PERSPECTIVE PSYCHOLOGY

Unit	Existing	Changes
I	Introduction to psychology Psychology as a Science, Methods in Psychology- Experimental Methods, Systematic Observation, clinical method. Disciplines of Psychology. Early Schools of Psychology- Structuralism, Gestalt Psychology, Functionalism, Behaviorism, Psychoanalysis. Modern Perspectives - Behavioral, Biological, Cognitive, Social, Developmental, Humanistic, Psychoanalytic.	-
II	Attitudes Attitude -Meaning, Types of Attitudes, How Attitude Develop, Importance of Attitudes, Improving Attitude, Developing Positive Attitudes, attitude and behavior. Communication Channels - Communication Barriers, Communication Openers, Communication Styles.	-
III	Self-Motivation Importance of Self-Motivation Activities and projects - Case study for Critical Thinking. Self-Management - Efficient Work Habits, Stress Management. Self Esteem Knowing Oneself and Accepting Oneself. Self Enhancement- Plan to Improve Actively Working to Improve Oneself.	Self-Motivation - Meaning, Activities for Self-Motivation. Self-Management -Meaning Critical Thinking - Definition -- Self Esteem- Meaning, Self Enhancement- Meaning
IV	Personality Definition, Nature of Personality, Characteristics of Personality, elements of Personality, Types of Personality, Aspects of Personality, methods of measuring personality, Basic Theories of Personality-Albert Bandura, Sigmund Freud's Psychoanalytic Theory, Charles Horton Cooley Laws and George Herbert Mead Theory, Importance of Personality, Techniques to Improve Personality.	-
V	Health psychology Definition, Mind-Body Relationship, Biopsychosocial Model, Health Behavior Meaning, Barriers to Modify Poor Health Behaviors-Intervening with Children, Adolescents and at-risk people, Cognitive Behavioral Therapy (CBT) in Nutrition. Transtheoretical Model of Behavior Change, Need, Functions of Health Psychologists, Application of Health Psychology in Nutritional Counseling.	-

PERCENTAGE OF SYLLABUS REVISED: 16%

COURSE FOCUSES ON:

✓	Skill Development	Entrepreneurial Development
✓	Employability	Gender Sensitization
	Intellectual Property Rights (IPR)	Innovations
	Social awareness / Environment	Constitutional Rights/Human Values/Ethics



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## Syllabus Revision – Practical Course B.Sc. Food Science and Nutrition

**Faculty:** Bio-Sciences

**Board:** Food Science and Nutrition

**Semester:** IV

**Course Code/ Name:** 24FNU4CP / DIETETICS

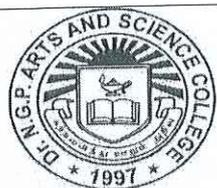
Exp. No.	Existing	Changes
1.	Planning and preparation of routine hospital diets – clear fluid, full fluid, soft, bland and pureed diet	-
2.	Planning and preparation of diet for underweight.	-
3.	Planning and preparation of diet for overweight and obesity.	-
4.	Febrile conditions - preparation of diet for typhoid, tuberculosis	-
5.	Planning and preparation of diet for diarrhea, constipation, peptic ulcer, jaundice.	-
6.	Planning and preparation of diet for nephritis	Dialysis
7.	Planning and preparation of diet for chronic kidney-disease	Renal failure
8.	Planning and preparation of diet for hypertension	-
9.	Planning and preparation of diet for atherosclerosis	-
10.	Planning and preparation of diet for type 1 diabetes mellitus	and type 2
11.	Planning and preparation of diet for gestational diabetes mellitus	-
12.	Planning and preparation of diet for cancer	-
13.	Planning and preparation of diet for lactose intolerance	-
<b>Experiments Under DBT</b>		
1.	Low-FODMAP Diet Planning for IBS (irritable bowel syndrome)	
2.	Enteral Nutrition: Planning Tube Feeding Formulas	

**Note:** Out of 13 – 10 mandatory

**PERCENTAGE OF SYLLABUS REVISED: 10%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)		Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: IV

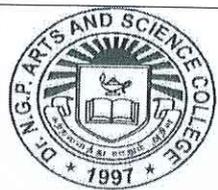
Course Code/ Name: 24FNP2CB / FOOD SAFETY AND QUALITY MANAGEMENT

Unit	Contents
I	<b>Fundamentals of Food Safety</b> Definition and significance of food safety. Types of food hazards: biological, chemical, physical. Emerging concerns: GMOs, allergens, pesticide residues, heavy metals, antibiotics. Foodborne illnesses and outbreak investigations. Introduction to risk analysis: risk assessment, risk management, risk communication.
II	<b>Food Laws and Regulatory Framework</b> Indian Food Regulatory Agencies: FSSAI, AGMARK, BIS, EIC. International Food Regulations: Codex Alimentarius, WHO, FAO, ISO, WTO. Food Safety and Standards Act (FSSA) 2006 – key features. Licensing, registration, and labeling regulations. Food import/export regulations and certification schemes.
III	<b>Food Quality and Management Systems</b> Concepts of food quality: sensory, nutritional, microbiological. Total Quality Management (TQM). Quality control vs. Quality assurance. Food Safety Management Systems: ISO 22000, BRC, FSSC 22000. Good Manufacturing Practices (GMP), Good Hygiene Practices (GHP), and Sanitation SOPs.
IV	<b>HACCP and Food Safety Audits</b> Principles and application of HACCP. Prerequisite programs (PRPs). HACCP plan development and documentation. Internal and external audits – types, preparation, reporting. Role of auditors and audit procedures in food industries.
V	<b>Recent Trends in Food Safety and Quality Monitoring</b> Rapid methods for microbiological testing (ELISA, PCR). Non- destructive quality evaluation methods. Food traceability systems: Blockchain, RFID. Food fraud and adulteration detection. Role of AI and digital technologies in food safety monitoring.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)	✓	Innovations
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## Syllabus Revision – Practical Course M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: IV

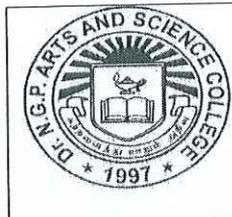
Course Code/ Name: 24FNP4DQ / NUTRITION IN HEALTH

Exp. No.	Contents
1	Menu planning and preparation for weight management
2	Menu planning and preparation for IT professionals working on shifts
3	Menu planning and preparation for children and adolescents during examination
4	Menu planning and preparation for balancing neurotransmitters to enhance memory
5	Menu planning and preparation for Acute Malnutrition in children
6	Planning and preparation of Ready-to-Use Therapeutic Food (RUTF)
7	Menu planning and preparation for pregnant women with nutritional anemia
8	Menu planning and preparation for pre-eclampsia in pregnancy.
9	Menu planning and preparation for lactating mother.
10	Menu planning and preparation for geriatrics.
11	Menu planning and preparation for non-endurance activity.
12	Menu planning and preparation for micronutrient deficiency.

**Note:** Out of 15 – 13 mandatory.

**PERCENTAGE OF SYLLABUS REVISED: 100%**  
**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)		Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

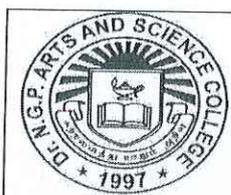
Semester: VI

Course Code/ Name: 233FN1A6CB / FOOD PRODUCT DEVELOPMENT AND MARKETING

Unit	CONTENT
I	<b>Introduction to food product development</b> - Overview of Food Product Development Process - ideation, concept development, formulation, testing, scale-up, and commercialization, market trends, analyzing consumer behavior and preferences, Types of food products, challenges in product development. Analysis of case studies on successful product launches, consumer trends, and brand strategies.
II	<b>Food formulation and processing techniques</b> - Ingredients selection and functionality, Food processing techniques – steps in formulation and aseptic processing, Formulation principles, Prototyping and pilot testing - Creating prototypes and testing scalability for large-scale production.
III	<b>Sensory evaluation and quality assurance</b> - Sensory evaluation techniques, Consumer testing and acceptability - focus groups and surveys, Quality control and assurance, Shelf-life testing and stability studies - factors affecting shelf-life, storage conditions, and accelerated stability studies.
IV	<b>Food marketing and labeling</b> - Food marketing and positioning, Packaging and labeling regulations, Consumer behavior and purchasing patterns - targeting demographics, psychographics, and analyzing purchase trends, Marketing strategies for food products - digital marketing, Influencer partnerships, Point-of-sale tactics and Sustainability marketing.
V	<b>Sustainability, ethics, and innovation in food product development</b> - Sustainability in product development, Ethical Considerations and social responsibility - transparency, fair trade, animal welfare, and environmental impact, Innovation and future trends, Regulatory compliance and food safety standards - FSSAI, FDA, HACCP, IPR in new product development, Food forensics.

PERCENTAGE OF SYLLABUS REVISED: 100%  
 COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
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## Syllabus Revision – Practical Course B.Sc. Food Science and Nutrition

**Faculty:** Bio-Sciences

**Board:** Food Science and Nutrition

**Semester:** VI

**Course Code/ Name:** 233FN1A6CP / FOOD PRODUCT DEVELOPMENT AND MARKETING

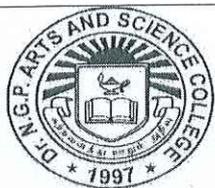
Exp. No.	Existing
1.	Introduction to food product development and types of food products
2.	Ingredient selection and functionality analysis
3.	Develop a prototype for a novel food product
4.	Product preservation techniques
5.	Sensory evaluation - Standardization of test methods
6.	Flavor and texture modification
7.	Nutritional profiling and labeling
8.	Quality control tests (physical & chemical)
9.	Product stability and shelf-life testing (moisture and water activity)
10.	Selection and testing of packaging material
11.	Costing & economic feasibility
12.	Final product presentation and report preparation
<b>Experiments Under DBT</b>	
1.	Reduction of sugar in baking & confectionery using natural sweeteners
2.	Formulation of fermented & gut friendly foods

**Note: Out of 12 – 10 mandatory**

**PERCENTAGE OF SYLLABUS REVISED: 100%**

**COURSE FOCUSES ON:**

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: VI

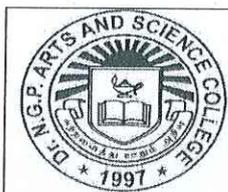
Course Code/ Name: 223FN1A6DA / FOOD HANDLING AND STORAGE

Unit	Contents
I	<b>Fundamentals of Food Handling and Hygiene</b> Importance of food handling in safety and quality. Sources and types of food contamination (biological, chemical, physical). Personal hygiene and sanitation for food handlers. Cross-contamination and its prevention. Good Handling Practices (GHP) and hygiene standards. Sanitation of food contact surfaces. Importance of water quality in food handling
II	<b>Handling Practices in Different Food Sectors</b> Handling of raw and cooked foods. Handling perishable and non-perishable foods. Food handling in domestic kitchens, institutions, and retail outlets. Handling practices in foodservice and catering. Use of equipment, utensils, and safety measures during handling. Safe thawing and reheating practices. Handling of allergen-containing foods and prevention of cross-contact
III	<b>Food Storage Principles and Techniques</b> Principles of storage: moisture control, temperature control, oxygen management. Types of storage systems: dry, refrigerated, frozen, controlled atmosphere. Storage requirements for cereals, fruits, vegetables, dairy, meat, poultry, and seafood. Pest management and hygiene in storage. Stock rotation systems: FIFO and FEFO. Humidity control in storage. Compatibility of packaging materials with storage conditions
IV	<b>Transportation and Distribution of Food</b> Role of transportation in food quality and safety. Modes of food transport and packaging considerations. Cold chain logistics and temperature management. Sanitary transport practices. Risks and preventive measures during distribution. Traceability during transportation (e.g., barcoding, batch coding). Hygienic practices during loading and unloading operations.
V	<b>Food Safety Regulations, Quality Assurance, and Innovations</b> Food safety laws and standards (FSSAI, HACCP basics). Quality assurance in handling and storage. Food spoilage and indicators of food quality loss. Modern trends in food handling and storage (IoT, smart storage systems). Sustainable and green practices in food handling and storage. Introduction to food audits and inspections. Voluntary certifications (e.g., ISO 22000, BRC Global Standard).

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development		Entrepreneurial Development
✓	Employability		Gender Sensitization
	Intellectual Property Rights (IPR)	✓	Innovations
✓	Social awareness / Environment		Constitutional Rights/Human Values/Ethics



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### Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: VI

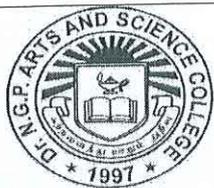
Course Code/ Name: 233FN1A6DB - NUTRITION CARE PROCESS

Unit	Content
I	<b>Introduction to Nutrition Care Process</b> Definition, Purpose and the steps in NCP- Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, Monitoring and Evaluation. Documentation of Nutrition Care Process (ADIME and SOAP format).
II	<b>Nutritional Imbalance and Diabetes Mellitus</b> Nutrition care process for Underweight and Obesity, Diabetes Mellitus (T1DM, T2DM and Gestational Diabetes) - a case study approach.
III	<b>Cardiovascular disease, renal disease and Cancer</b> Nutrition care process for cardiovascular diseases (Hypertension and hyperlipidemia), renal diseases (CKD, ESRD) and Cancer - a case study approach.
IV	<b>Gastrointestinal Diseases and Critical illness</b> Nutrition care processes for Gastrointestinal Diseases (Constipation, diarrhea, peptic ulcer) and critically ill patients - a case study approach.
V	<b>Hepatobiliary, Pancreatic Diseases</b> Nutrition care processes for Hepatobiliary, Pancreatic diseases (Cirrhosis, Fatty Liver disease, Cholelithiasis, Pancreatitis) – a case study approach.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development		Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
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BoS

20<sup>th</sup>

## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: VI

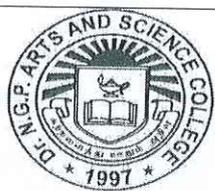
Course Code/ Name: 223FN1A6DD / BASICS OF FOOD PACKAGING

Unit	Existing	Changes
I	<b>Food packaging</b> Definition, functions of packaging for different foods, requirements for effective food packaging. Types of Packaging -primary, secondary and tertiary, characteristics, applications in food industry, Packaging Hazards and precautions.	and importance of food packaging. protection, preservation, communication, convenience, containment.
II	<b>Packaging materials</b> Packaging materials - Introduction, purpose, requirements, types of containers. Modern packaging materials and forms - Glass containers, metal cans, composite containers, aerosol containers, rigid plastic packages, semi-rigid packaging, flexible and edible packaging.	and essential requirements of packaging materials. Introduction to coating and lamination techniques.
III	<b>Packaging of different food products</b> Packaging of cereal products and whole grains, Packaging of milled grains, Packaging of Cereal based convenience products and weaning products. Packaging for Fruits, Vegetables and Processed Foods, Packaging for Dry Foods, Dairy, Meat, and Seafood Products.	Considerations for packaging shelf-life and food quality.
IV	<b>Packaging techniques and systems</b> Packaging system - Aseptic packaging, Controlled Atmosphere Packaging, Modified Atmosphere Packaging, Active packaging, Intelligent and Smart Packaging. Vacuum Packaging, Shrink Wrap, and Skin Packaging, Brik-Pak, Bag-in-Box, and Tetra Pak Systems.	Introduction to sustainable packaging – biodegradable materials, recycling, and environmental impact.
V	<b>Labeling and packaging standards</b> Labeling- Purpose of labels, Critical elements of food label, type of label, Labels for freight containers, labeling regulations, bar code, Nutrition labeling, health claims, mandatory labeling provisions, The Food Safety and Standards (Labelling and Display) Regulations, 2020.	Testing, and Regulatory. Packaging testing – tensile strength, puncture resistance, water, vapor and gas permeability. International and national packaging standards: FSSAI, BIS, Consumer Protection Act, 2019, Food Safety and Standards Act, 2006, Legal Metrology (Packaged Commodities) Rules, 2011, Complaint Filing Mechanisms (FSSAI Portal, Food Safety Connect App, E-Daakhil Portal)

PERCENTAGE OF SYLLABUS REVISED: 56%

COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
✓	Social awareness / Environment	✓	Constitutional Rights/Human Values/Ethics



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## Syllabus Revision B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: VI

Course Code/ Name: 233FN1A6DE / DIET COUNSELING

Unit	Content
I	<b>Introduction to Diet Counseling</b> Definition, goals, scope, and types of counseling. Verbal and non-verbal communication. Active listening, empathy, and rapport building. Counselor – Characteristics and qualities of an effective diet counselor. The Client – Characteristics, expectations.
II	<b>Practical considerations in Diet Counseling</b> Transtheoretical Model (Stages of Change). Motivational Interviewing (MI) techniques. SMART goal setting and goal-oriented counseling. Cultural and socioeconomic considerations.
III	<b>Counseling Process and Documentation</b> Mock client profiles for counseling process: Overweight adult with sedentary lifestyle, Anemia in an adolescent girl. Documentation - Assessment summary, PES statement, Nutrition intervention goals, Monitoring and evaluation plan, and final ADIME note.
IV	<b>Counseling Across the Lifecycle and Clinical Conditions</b> Diet counseling for: Pregnant and lactating women, children, adolescents, adults and elderly population. Counseling in clinical conditions: Obesity, Diabetes, Hypertension, Cardiovascular diseases, Renal disorders, Gastrointestinal disorders. Lifestyle counseling and preventive nutrition.
V	<b>Teaching aids in Diet Counseling</b> Types of Visual media. Delivering oral presentation-Introduction, Implementation of an effective presentation. Individual vs. group counseling, Use of visuals and digital tools in counseling. Meal planning and portion size education. Evaluation of counseling effectiveness (feedback, outcome measures).

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development		Entrepreneurial Development
✓	Employability		Gender Sensitization
✓	Intellectual Property Rights (IPR)	✓	Innovations
	Social awareness / Environment		Constitutional Rights/Human Values/Ethics