



MUSLIM ARTS COLLEGE

(Accredited by NAAC with B+ grade & Affiliated to Manonmaniam Sundaranar University,
Tirunelveli; Recognized US 2(f) 12 (B) of UGC Act.)

Thiruvithancode, Kanyakumari District, Tamil Nadu - 629174.

DEPARTMENT OF NUTRITION AND DIETETICS

CBCS SYLLABUS

Learning Outcome-based Curriculum Framework for

NUTRITION AND DIETETICS (B.Sc.)

*Applicable for students admitted from June 2026 as per the Resolutions of the Academic Council Meeting held
on 01.06.2026*

Vision

- To promote better nutrition and healthy lifestyles, enabling people to live better lives through quality food and awareness.

Mission

- To achieve excellence in teaching and research
- To develop awareness about nutrition, health, and environment
- To promote leadership in the field of life sciences
- To ensure understanding of safe, high-quality, and balanced nutrition
- To encourage students to promote health and well-being in society

Academic and Professional Attributes of the Graduates

- 1. Disciplinary Knowledge**
Demonstrate comprehensive knowledge of human nutrition, dietetics, food science, physiology, biochemistry, community nutrition, and therapeutic nutrition.
- 2. Technical and Practical Competence**
Apply laboratory techniques, nutritional assessment methods, dietary planning, food preparation, and quality evaluation using scientific principles.
- 3. Critical Thinking and Problem-Solving**
Analyze nutritional problems, interpret scientific data, and develop evidence-based dietary interventions for individuals and communities.
- 4. Communication and Counseling Skills**
Communicate nutrition and health information effectively through oral, written, and digital media, and provide appropriate nutrition education and dietary counseling.
- 5. Research and Innovation**
Apply basic research methods, interpret research findings, and promote innovation in nutrition, food product development, and public health.
- 6. Ethical and Professional Responsibility**
Practice professional ethics, maintain confidentiality, and demonstrate integrity, empathy, and accountability in nutrition and healthcare services.
- 7. Health Promotion and Social Responsibility**
Promote healthy lifestyles, balanced nutrition, food safety, and disease prevention through community outreach and public health initiatives.
- 8. Leadership and Teamwork**
Work effectively as a member or leader of multidisciplinary healthcare and community teams while demonstrating organizational and managerial skills.
- 9. Digital and Information Literacy**
Utilize information and communication technologies, nutrition software, digital databases, and scientific literature for lifelong learning and professional practice.
- 10. Lifelong Learning and Professional Development**
Engage in continuous learning, higher education, research, entrepreneurship, and professional development to address emerging challenges in nutrition, dietetics, and public health.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Upon completion of the B.Sc. Nutrition and Dietetics Degree Programme, graduates are expected to	Mapping with Mission
PEO1	Apply the principles of nutrition, dietetics, food science, and allied biological sciences to promote health, prevent diseases, and pursue higher education, research, or professional practice.	M1 & M2
PEO2	Demonstrate technical competence, analytical skills, and evidence-based decision-making in nutritional assessment, dietary planning, food safety, and community nutrition through practical and experiential learning.	M2 & M3
PEO3	Exhibit professional ethics, leadership, communication, teamwork, and entrepreneurial abilities to meet the needs of healthcare institutions, food industries, public health organizations, and society	M3 & M5
PEO4	Engage in lifelong learning, research, innovation, and continuous professional development by adopting emerging technologies and current advancements in nutrition and dietetics for sustainable health and well-being.	M1 & M4

Programme Outcomes (POs)

POs	Upon completion of the B.Sc. Nutrition and Dietetics Degree Programme, students will be able to	Mapping with PEOs
PO1: Disciplinary Knowledge	Apply comprehensive knowledge of nutrition, dietetics, food science, physiology, biochemistry, microbiology, and allied sciences to promote health and prevent diseases.	PEO1
PO2: Communication Skills	Communicate effectively with individuals, healthcare professionals, and communities through oral, written, and digital modes, and provide appropriate nutrition education and dietary counselling.	PEO2, PEO3
PO3: Critical thinking	Analyze nutritional problems, evaluate scientific evidence, and apply logical reasoning to develop appropriate nutritional interventions and dietary recommendations.	PEO1, PEO2
PO4: Problem solving	Identify, assess, and solve nutrition- and health-related problems using scientific principles and evidence-based approaches in clinical, community, and food service settings.	PEO2
PO5: Analytical reasoning	Interpret nutritional, biochemical, and clinical data using analytical methods and draw valid conclusions for improving health outcomes.	PEO2
PO6: Research-related skills	Demonstrate the ability to plan, conduct, analyze, interpret, and report basic research in nutrition, dietetics, food science, and public health while adhering to scientific methodology.	PEO1, PEO4

PO7: Team work and Leadership	Work effectively as a member or leader of multidisciplinary healthcare and community teams, demonstrating professionalism, cooperation, and leadership qualities.	PEO3
PO8: Scientific and Digital Competence	Apply scientific reasoning, laboratory skills, information technology, nutrition software, and digital tools for data analysis, dietary assessment, and evidence-based practice.	PEO2, PEO4
PO9: Ethical and Social Responsibility	Demonstrate ethical values, professional integrity, cultural sensitivity, environmental awareness, and social responsibility while promoting nutrition, food safety, and public health.	PEO3
PO10: Lifelong Learning	Engage in lifelong learning, continuous professional development, innovation, entrepreneurship, and adaptation to emerging trends in nutrition, dietetics, and healthcare.	PEO4

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of the B.Sc Nutrition and Dietetics Degree Programme, students will be able to:	Mapping with POs
PSO1	Clinical Nutrition and Dietetics: Apply the principles of nutrition, dietetics, physiology, biochemistry, and food science to assess nutritional status, plan balanced diets, and provide evidence-based dietary interventions for individuals and patients.	PO1, PO3, PO4, PO5
PSO2	Community Nutrition and Public Health: Plan, implement, and evaluate nutrition education programmes, community nutrition interventions, and public health initiatives to improve nutritional status and promote healthy lifestyles.	PO2, PO4, PO7, PO9
PSO3	Food Science, Food Safety, and Quality Assurance: Apply scientific knowledge of food science, food processing, food safety, quality control, and food service management to ensure the production and distribution of safe, nutritious, and quality foods.	PO1, PO5, PO8, PO9
PSO4	Research, Innovation, and Entrepreneurship: Conduct basic research, analyze nutritional and health data, utilize modern technologies, and develop innovative products, services, and entrepreneurial ventures in nutrition, dietetics, and the food industry.	PO5, PO6, PO8, PO10
PSO5	Professional Ethics and Lifelong Learning: Demonstrate professional ethics, effective communication, leadership, teamwork, and commitment to lifelong learning for successful careers, higher education, and service to society.	PO2, PO7, PO9, PO10

Mapping of Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

POs / PSOs	PSO1	PSO2	PSO3	PSO4	PSO5
PO1: Disciplinary Knowledge	3	2	3	2	2
PO2: Communication Skills	2	3	2	2	3
PO3: Critical Thinking	3	2	2	3	2
PO4: Problem Solving	3	3	2	2	2
PO5: Analytical Reasoning	3	2	3	3	2
PO6: Research-related Skills	2	2	2	3	2
PO7: Teamwork and Leadership	2	3	2	2	3
PO8: Scientific and Digital Competence	2	2	3	3	2
PO9: Ethical and Social Responsibility	2	3	3	2	3
PO10: Lifelong Learning	2	2	2	3	3

•3 – High Correlation

•2 – Moderate Correlation

•1 – Low Correlation

COURSES OFFERED

SEMESTER I

Part	Course Code	Title of the Course	Credits	Hours / Week
Part I	AGTL11/ AGMY11/ AGAB11	Language: Tamil /Malayalam/Arabic	3	6
Part II	AGEN11	English	3	6
Part III	AMND11	Core Course I: Human Physiology	5	5
	AMNDP1	Core Practical I: Human Physiology Practical	3	3
	AAND11	Allied I: Chemistry For Biological Science - I	3	4
	AANDP1	Allied Practical I: Chemistry For Biological Sciences Inorganic Volumetric Analysis	2	2
Part IV	ASND11	Skill Enhancement Course: SEC-1- PublicHealth Nutrition	2	2
	AFND11	Foundation Course: Basic Food Science	2	2
Total			23	30

SEMESTER I

CORE COURSE I: HUMAN PHYSIOLOGY

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AMND11	Core	Y	Y	-	-	5	5	25	75	100

Pre-requisite

Fundamental understanding of the structure and functions of the human body. Interest in health sciences, nutrition, and biological processes. Basic scientific observation, analytical, and communication skills.

Learning Objectives

The course aims to:

1. Understand the structure and functions of cells, tissues, organs, and major organ systems of the human body.
2. Explain the physiological mechanisms governing the cardiovascular, respiratory, digestive, excretory, endocrine, nervous, immune, and reproductive systems.
3. Relate the normal functioning of body systems to the maintenance of homeostasis and overall health.
4. Apply the principles of human physiology to nutrition, health promotion, disease prevention, and clinical practice.
5. Develop scientific thinking, analytical skills, and practical knowledge required for higher studies and professional practice in Nutrition and Dietetics.

Course Outcomes (COs)

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Explain the structure and functions of cells, tissues, and the major organ systems of the human body.	K2
CO2	Describe the physiological processes of the cardiovascular, respiratory, digestive, excretory, endocrine, immune, and reproductive systems.	K2
CO3	Apply the principles of human physiology to explain homeostasis and the normal functioning of body systems.	K3
CO4	Analyze the relationship between physiological functions, nutrition, and health in maintaining normal body functions and preventing diseases.	K4
CO5	Evaluate physiological responses under normal and altered conditions and	K5

	relate them to nutritional care and health management.	
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Bloom's Taxonomy Levels

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

Course Content

Units	Contents	No. of Hours
I	Cell – Structure of organs and functions. Tissues – Structure, Classification and functions.	15
II	Blood– Composition, functions, coagulation, factors affecting coagulation, blood groups. Gastro intestinal and Hepato biliary system – Structure, physiology and functions for different organs and role of hormones and enzymes.	15
III	Immune system – Innate, acquired and active immunity, cell mediated immunity, humoral immunity and complement system. Heart and circulation – Structure, cardiac cycle, cardiac output, factors affecting cardiac output, normal ECG, heart failure, blood pressure, control and factors affecting blood pressure.	15
IV	Respiratory system – Structure and functions, Lung volumes and lung capacities, Factors affecting efficacy of respiration. Excretory system – (A) Urinary System: -Structure and functions of organs of urinary system (In brief), Mechanism of urine formation. (B) Skin: - Structure and functions, Regulation of body temperature.	15
V	Reproductive system– (A) Female reproductive system--Structure and functions, menstrual cycle, menarche and menopause. Male Reproductive system — Structure and functions. Endocrine system - Thyroid, Parathyroid, Adrenal gland, Pituitary and Sex glands – Structure and functions.	15
	Total	75

S. No.	Reference Books
1	Ross and Wilson (2011), Anatomy and physiology in Health and Illness, 11th Edition, Church Hill Livingstone.
2	West, J.B.(2007),Best and Taylor's Physiological Basis of Medical Practice,11th Edition.
3	Gyton (1996), Test Book of Medical Physiology,9thEdition, Prism Books Pvt. Ltd.,W.B. Sanders Company, USA.
4	Chatterjee C.C (2016),Human Physiology Volume I, Medical Allied Agency, Kolkata.
5	Chatterjee C.C (2004),Human Physiology VolumeII, Medical Allied Agency, Kolkata.
6	Sembulingam, K. (2000) Essentials of Medical Physiology, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi.
7	Chaudhri, K.(1993) Concise Medical Physiology, New Central Book Agency (Parental)

	Ltd., Calcutta.
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Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	3	2	2	1	2	1	1	2	1	1
CO2:	3	2	2	2	2	1	1	2	1	1
CO3:	3	2	3	3	2	2	1	2	2	1
CO4	3	2	3	3	3	2	2	2	2	2
CO5:	3	3	3	3	3	3	2	3	3	2

3 – Strong, 2 – Medium , 1 – Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	2	1	1
CO2	3	2	2	1	1
CO3	3	3	2	2	2
CO4	3	3	3	2	2
CO5	3	3	3	3	3
Weightage	15	13	12	9	9
Weighted Percentage of Course Contribution	3.0	2.6	2.4	1.8	1.8

FIRST YEAR - SEMESTER I

CORE/MAJOR PRACTICAL I – HUMAN PHYSIOLOGY

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AMNDP1	Core	-	-	Y	Y	3	3	50	50	100

Learning Objectives

The course aims to:

1. Develop practical skills in identifying the microscopic structure of human tissues, organs, and endocrine glands.
2. Train students in the collection, handling, and processing of blood samples using standard laboratory procedures.
3. Perform basic hematological investigations and interpret normal physiological parameters.
4. Demonstrate the measurement of vital signs and evaluate physiological responses under normal conditions.
5. Develop laboratory skills, scientific observation, safety practices, and accurate recording of experimental results.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Identify the microscopic structure of human tissues, organs, and endocrine glands using appropriate laboratory techniques.	K2
CO2	Perform blood collection and estimate basic hematological parameters such as hemoglobin, hematocrit, erythrocyte sedimentation rate, blood group, bleeding time, clotting time, and platelet count.	K3
CO3	Demonstrate the preparation and examination of stained blood smears and interpret normal hematological findings.	K3
CO4	Measure physiological parameters including pulse rate and blood pressure and analyze the effect of exercise on cardiovascular function.	K4
CO5	Apply standard laboratory practices, maintain safety and ethical standards, and interpret experimental results accurately in human physiology practicals.	K5

Bloom's Taxonomy Levels

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

Course Content

Contents	
1.	Microscopic study of tissues-epithelial, connective and muscular.
2.	Collection of blood sample-Capillary blood from finger tips and venous blood.
3.	Separation of blood components (Centrifugation).
4.	Estimation of hemoglobin-Sahli's Acid hematin method.
5.	Determination of Hematocrit (Wintrobemethod).
6.	Preparation and examination of stained blood smear (Wedge or glass slide method).
7.	Determination of Erythrocyte Sedimentation Rate (Wintrobe method).
8.	Determination of blood group.
9.	Determination of bleeding time (Duke method) and coagulation time (Capillary tube method).
10.	. Platelet count (Rees Ecker method by hemocytometry).
11.	Clinical examination of radial pulse (pulse rate).
12.	Measurement of blood pressure (Sphygmomanometer).
13.	Effect of exercise on blood pressure and heart rate.
14.	Microscopic structure of heart, digestive system and kidney.
15.	Microscopic structure of reproductive organs-ovary, uterus, mammary glands and testis.
16.	Microscopic structure of endocrine glands- thyroid, pituitary and adrenal.

S. No.	Reference Books
1	G.K.Pal and Pravati pal, Text book of practical physiology, Orient Longman Ltd. 2001.

Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	2	2	1	1	2	1	1
CO2	3	2	3	3	3	2	2	3	2	2
CO3	3	2	3	3	3	2	2	3	2	2
CO4	3	3	3	3	3	2	2	3	3	2
CO5	3	3	3	3	3	3	3	3	3	3

3 – Strong, 2 – Medium , 1 – Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	2	1	2
CO2	3	3	2	2	2
CO3	3	3	3	2	2
CO4	3	3	3	2	3
CO5	3	3	3	3	3
Weightage	15	14	13	10	12
Weighted Percentage of Course Contribution	3.0	2.8	2.6	2.0	2.4

3 – Strong, 2 – Medium , 1 – Low

FIRST YEAR - SEMESTER I

ALLIED I: CHEMISTRY FOR BIOLOGICAL SCIENCE - I

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AAND11	Allied I	Y	Y	-	-	3	4	25	75	100

Pre-requisite

Understanding of atoms, molecules, chemical bonding, acids, bases, and organic compounds. Basic laboratory safety practices and scientific observation skills. Interest in biological sciences and their chemical applications in nutrition and health.

Learning Objectives

The course aims to:

1. Understand the fundamental concepts of chemical bonding, molecular structure, and reaction mechanisms relevant to biological systems.
2. Explain the properties, preparation, and applications of industrial chemicals, fuels, fertilizers, drugs, and specialty chemicals.
3. Develop knowledge of organic chemistry concepts, including aromaticity, heterocyclic compounds, hybridization, and electronic effects.
4. Apply analytical chemistry principles and separation techniques used in biological, pharmaceutical, and food science laboratories.
5. Relate chemical principles to biological sciences, nutrition, food technology, and healthcare applications.

Course Outcomes (COs)

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Explain the principles of chemical bonding, molecular orbital theory, hybridization, and molecular structure.	K2
CO2	Describe the preparation, properties, and applications of fuels, fertilizers, silicones, drugs, and specialty chemicals.	K2
CO3	Apply the concepts of organic reaction mechanisms, aromaticity, heterocyclic compounds, and electronic effects to solve chemical problems.	K3
CO4	Analyze the principles and applications of analytical methods, separation techniques, and chromatography used in biological sciences.	K4
CO5	Evaluate the importance of chemical concepts and analytical techniques in	K5

	nutrition, food science, pharmaceutical sciences, and biological research.	
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Bloom's Taxonomy Levels

K1 – Remember, **K2** – Understand, **K3** – Apply, **K4** – Analyse, **K5** – Evaluate, **K6** – Create

Course Content

Units	Contents	No. of Hours
I	Chemical Bonding: Molecular Orbital Theory- bonding, antibonding and non-bonding orbitals. Molecular orbital diagrams for Hydrogen, Helium, Nitrogen; discussion of bond order and magnetic properties.	12
II	Industrial Chemistry Fuels: Fuel gases: Natural gas, water gas, semi water gas, carbureted water gas, producer gas, CNG, LPG and oil gas (manufacturing details not required). Silicones: Synthesis, properties and uses of silicones. Fertilizers: Urea, ammonium sulphate, potassium nitrate, NPK fertilizer, superphosphate, triple superphosphate.	12
III	Fundamental Concepts in Organic Chemistry Reaction mechanisms: Types of reactions-aromaticity (Huckel's rule) aromatic electrophilic substitution; nitration, halogenation, Friedel- Craft's alkylation and acylation. Heterocyclic compounds: Preparation, properties of pyrrole and pyridine.	12
IV	Drugs and Speciality Chemicals: Definition, Structure and uses: Antibiotics viz., Penicillin, Chloramphenicol and Streptomycin; Anaesthetics viz., Chloroform and ether; Antipyretics viz., aspirin, paracetamol and ibuprofen; Artificial Sweeteners viz., saccharin, Aspartame and cyclamate; Organic Halogen compounds viz., Freon, Teflon.	12
V	Analytical Chemistry: Introduction to qualitative and quantitative analysis. Principles of volumetric analysis. Separation and purification techniques extraction, distillation and crystallization. Chromatography: principle and application of column, paper and thin layer chromatography.	12
	Total	60

S. No.	Reference Books
1	V.Veeraiyan, Textbook of Ancillary Chemistry; High mount publishing house, Chennai, first edition, 2009.
2	S. Vaithyanathan, Text book of Ancillary Chemistry, Priya Publications, Karur, 2006.
3	ArunBahl, B.S.Bahl, Advanced Organic Chemistry; S.Chand and Company, New Delhi, twenty third edition, 2012.
4	P.L.Soni, H.M.Chawla, Text Book of Organic Chemistry; Sultan Chand & sons, New Delhi, twenty ninth edition, 2007.

Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	2	3	1	1	2	1	1
CO2	3	2	2	2	2	1	1	2	1	1
CO3	3	2	3	3	3	2	1	2	2	1
CO4	3	2	3	3	3	2	2	3	2	2
CO5	3	3	3	3	3	3	2	3	3	2

3 – Strong, 2 – Medium , 1 – Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	3	2	1
CO2	2	2	3	2	1
CO3	3	2	3	3	2
CO4	3	2	3	3	2
CO5	3	3	3	3	3
Weightage	14	11	15	13	9
Weighted Percentage of Course Contribution	2.8	2.2	3.0	2.6	1.8

3 – Strong, 2 – Medium , 1 – Low

FIRST YEAR - SEMESTER I

ALLIED PRACTICAL I – CHEMISTRY FOR BIOLOGICAL SCIENCES

INORGANIC VOLUMETRIC ANALYSIS

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AANDP1	Allied practical I	-	-	Y	Y	2	2	50	50	100

Learning Objectives

The course aims to:

1. Develop practical skills in the preparation, standardization, and handling of chemical solutions used in volumetric analysis.
2. Understand the principles, techniques, and applications of acid-base, redox, complexometric, and precipitation titrations.
3. Perform quantitative chemical analyses using standard laboratory equipment and analytical methods.
4. Interpret experimental observations, calculate analytical results, and evaluate their accuracy and precision.
5. Apply laboratory safety practices, scientific ethics, and proper documentation in chemical analysis.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Demonstrate the correct use of laboratory apparatus such as burettes, pipettes, volumetric flasks, and analytical balances for quantitative analysis.	K2
CO2	Prepare standard solutions and perform volumetric titrations accurately using appropriate analytical techniques.	K3
CO3	Apply volumetric methods to estimate chemical constituents such as acids, bases, metal ions, and water hardness.	K3
CO4	Analyze experimental data, perform calculations, and interpret the results of volumetric analyses with accuracy and precision.	K4
CO5	Evaluate the reliability of analytical results by following standard laboratory procedures, safety practices, and quality control measures.	K5

Bloom's Taxonomy Levels

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

Course Content

Contents	
1.	Estimation of sodium hydroxide using standard sodium carbonate.
2.	Estimation of hydrochloric acid using standard oxalic acid.
3.	Estimation of ferrous sulphate using standard mohrs salt.
4.	Estimation of oxalic acid using standard ferrous sulphate.
5.	Estimation of potassium permanganate using standard sodiumhydroxide.
6.	Estimation of magnesium using EDTA.
7.	Estimation of ferrous ion using diphenyl amine as indicator.

S. No.	Reference Books
1	V.Venkateswaran, R.Veerassamy, A.R.Kulandaivelu, Basic Principles of Practical Chemistry; Sultan Chand & sons, Second edition, 1997.

Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	2	2	1	1	2	1	1
CO2	3	2	3	3	3	2	2	3	2	2
CO3	3	2	3	3	3	2	2	3	2	2
CO4	3	3	3	3	3	3	2	3	2	2
CO5	3	3	3	3	3	3	3	3	3	3

3 – Strong, 2 – Medium , 1 – Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	3	2	1
CO2	3	2	3	3	2
CO3	3	3	3	3	2
CO4	3	3	3	3	2
CO5	3	3	3	3	3

Weightage	15	13	15	14	10
Weighted percentage of Course Contribution to POs	3.0	2.6	3.0	2.8	2.0

FIRST YEAR - SEMESTER I
SEC I– PUBLIC HEALTH NUTRITION

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
ASND11	SEC I	Y	Y	-	-	2	2	25	75	100

Learning Objectives

The course aims to:

1. Understand the concepts, scope, and importance of public health nutrition in promoting individual and community health.
2. Acquire knowledge of nutritional assessment methods and common nutritional problems affecting different population groups.
3. Develop an understanding of national nutrition policies, programmes, and the roles of national and international agencies in combating malnutrition.
4. Apply principles of nutrition education to promote healthy dietary practices and disease prevention in the community.
5. Develop skills to plan, implement, and evaluate community-based nutrition interventions for improving public health.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Explain the concepts, scope, objectives, and importance of public health nutrition in improving community health.	K2
CO2	Describe the major nutritional problems affecting different population groups and the methods used for assessing nutritional status.	K2
CO3	Apply the principles of nutritional assessment and interpret anthropometric, clinical, biochemical, and dietary assessment data.	K3
CO4	Analyze national nutrition policies, nutrition programmes, and the roles of national and international organizations in combating malnutrition.	K4
CO5	Evaluate community nutrition problems and design appropriate nutrition education strategies to promote health and prevent nutritional disorders.	K5

Bloom's Taxonomy Levels

K1 – Remember, **K2** – Understand, **K3** – Apply, **K4** – Analyse, **K5** – Evaluate, **K6** – Create

Course Content

Unit	Contents	No. of Hours
I	Concept and scope of public nutrition Definition, concept, scope and multidisciplinary nature of public nutrition Nutritional problems affecting the community Under nutrition (Protein energy malnutrition, Wasting, Stunting), Over nutrition (obesity and related risks), Nutritional anemia, Vitamin A deficiency, Iodine deficiency disorders, Fluorosis.	10
II	Assessment of nutritional status Objectives and importance, Methods of assessment: Direct (Clinical signs, Anthropometry, Biochemical tests); Indirect (Diet surveys, vital statistics)	4
III	Nutrition policy and programs National nutritional policy; Integrated child development scheme (ICDS), Midday Meal Program- State and National (Poshan Abhyan), National programs for the prevention of anemia.	6
IV	Nutrition education Objectives, principles and scope of nutrition and health education, creating awareness on current public health of Nutrition.	4
V	Role of National and International agencies in combating malnutrition WHO, FAO, UNICEF; National: FSSAI, ICAR, ICMR,	6
	Total	30

S. No.	Reference Books
1	Wadhwa A and Sharma S (2003). Nutrition in the Community – A text book. Elite Publishing House Pvt. Ltd. New Delhi.
2	Park K (2011). Park's Textbook of Preventive and Social Medicine, 21st Edition. M/s Banarasidas Bhanot Publishers, Jabalpur, India.
3	Jelliffe DB, Jelliffe ERP, Zervas A and Neumann CG (1989). Community nutritional assessment with special reference to less technically developed countries. Oxford University Press. Oxford.
4	WHO (2006). Child Growth Standards: Methods and development: height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age (http://www.who.int/childgrowth/standards/en/).
5	Gupta, MC. And Mahajan BK. (2003) Text book of Preventive and Social Medicine 3rd Ed Jaypee brothers, Medical Publishers (p) Ltd.
S. No.	Web Sources (URL)
1	Mohfw.nic.in/NRHM/NIDD
2	http://www.nrhmorissa.gov.in/NIDDCP.html
3	www.Scripts.mit.edu

Mapping with Programme Outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10
CO1	3	3	1	1	1	1	3	1	1	3
CO2	3	3	3	3	2	3	3	3	2	3
CO3	3	3	3	3	2	3	3	3	2	3
CO4	3	3	3	3	2	2	3	3	2	3
CO5	3	3	3	3	3	3	3	3	3	3

3 – Strong, 2 – Medium, 1 – Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	2	1	3
CO2	3	3	2	2	3
CO3	3	3	2	2	3
CO4	3	3	3	2	3
CO5	3	3	3	3	3
Weightage	14	15	12	10	15
Weighted percentage of Course Contribution to POs	2.8	3.0	2.4	2.0	3.0

3 – Strong, 2 – Medium, 1 – Low

FIRST YEAR - SEMESTER I

FOUNDATION COURSE – BASIC FOOD SCIENCE

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AFND11	FC	Y	Y	-	-	2	2	25	75	100

Learning Objectives

The course aims to:

1. Understand the classification, composition, nutritive value, and functions of various food groups.
2. Explain the principles and methods of cooking and their effects on the nutritional quality of foods.
3. Develop knowledge of the composition, processing, and nutritional importance of cereals, millets, pulses, vegetables, fruits, and animal foods.
4. Apply appropriate cooking and food handling practices to minimize nutrient losses and improve food quality.
5. Appreciate the role of food science in promoting balanced nutrition, food safety, and healthy dietary practices.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Explain the classification, composition, nutritive value, and functions of different food groups and methods of cooking.	K2
CO2	Apply appropriate cooking methods for cereals, millets, and pulses to preserve their nutritional quality.	K3
CO3	Analyze the nutritive value and processing characteristics of vegetables, fruits, beverages, and fleshy foods.	K4
CO4	Evaluate the factors affecting nutrient losses during food preparation and recommend suitable methods to minimize them.	K5
CO5	Assess the role of food science principles in planning balanced diets and promoting healthy food choices.	K5

Bloom's Taxonomy Levels

K1 – Remember, **K2** – Understand, **K3** – Apply, **K4** – Analyse, **K5** – Evaluate, **K6** – Create

Course Content

Unit	Contents	No. of
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		Hours
I	Introduction to Food Science Functions of food; food guide based on basic five food groups, cooking - objectives and methods - Moist heat method, Dry heat method	6
II	Cereals Composition and nutritive value of rice and wheat. Best method of cooking, loss of nutrients during cooking; Advantages of par boiling. Introduction to millets – Nutritive value	6
III	Pulses Composition, nutritive value, best method of cooking loss of nutrients during cooking, germination and its advantages. Beverages – Types - Classifications	6
IV	Vegetables & Fruits Classification, nutritive value, loss of nutrients during cooking and methods of reducing nutrient loss during cooking.	6
V	Fleshy Food & Spices Classification, nutritive value. Meat, fish, egg and milk: Nutritive value. General functions of Spices, role in cookery, fats & oils.	6
	Total	30

S. No.	Reference Books
1	Shakuntala Manay, M. Shadaksharaswamy, Foods – Facts and Principles. 2 nd Edition. New Age international (P) Ltd, New Delhi, Reprint 2005.
2	Srilakshmi, Food Science, New Age international (P) Ltd, New Delhi, Reprint 2006.
3.	Sumathi R. Mudambi, Shalini M. Rao, M. V. Rajagopal Food Science, revised second edition, New Age International (P) Limited, Publishers New Delhi, reprint. 2006.
1	Swaminathan, Food Science and Experimental foods, The Bangalore printing and publishing Co. Ltd. Bangalore, 1992.

S. No.	Web Resources
1	https://www.sciencedirect.com/journal/trends-in-food-science-and-technology
2	https://www.ift.org/
3	https://www.fao.org/home/en/

Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	1	2	1	1	2	1	1
CO2	3	2	3	2	2	2	1	2	2	1
CO3	3	2	3	3	3	2	2	2	2	2
CO4	3	2	3	3	3	2	2	2	3	2
CO5	3	3	3	3	3	3	2	3	3	3

3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation.

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	2	1	2
CO2	3	2	3	2	2
CO3	3	3	3	2	2
CO4	3	3	3	2	3
CO5	3	3	3	3	3
Weightage	15	13	14	10	12
Weighted Percentage of Course Contribution to POs	3.0	2.6	2.8	2.0	2.4

3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation