



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 (3rd Cycle-3.64 CGPA)

Dr. N.G.P.-Kalapatti Road, Coimbatore-641 048, Tamil Nadu, India.

Website: www.drngpasc.ac.in | Email: info@drngpasc.ac.in | Phone: +91-422-2369100

BoS

17th

Department of Food Science and Nutrition

Board of Studies Meeting

The minutes of the 17th meeting of Board of Studies held on 05.04.2024 at 10.00am at the Department of Food Science and Nutrition (B1 Block – Room No. 1512).

Members Present:

S.No.	Name	Category
1.	Dr. D. Sridevi	Chairman
2.	Dr. T. Poongodi Vijayakumar Professor and Head Department of Food Science & Nutrition Periyar University Salem – 11	University Nominee
3.	Dr. A.J. Hemamalini Assistant Professor & Head Department of Clinical Nutrition and Dietetics Sri Ramachandra Institute for Higher Education and Research Chennai.	Subject Expert
4.	Dr. S. Sylvia Subapriya Professor and Head, Department of Food Science and Nutrition, Avinashilingam University For Women, Coimbatore-641043.	Subject Expert
5.	Ms. Anjali M	Members
6.	Dr. D. Jancy Rani	
7.	Mrs.P.P.Abirami	
8.	Ms. M. Rakeshwari	
9.	Ms. G. Priyaalini	
10.	Mrs. U. Rasikha	Co-Opted Members
11.	Dr. N. Kuppuchamy	
12.	Dr. A. Hazel Verbina	
13.	Dr. M. Suganthi	
14.	Dr. S. Gowri	Student Representatives
15.	Ms. Haritha Sri (III B.Sc. FSN)	
16.	Ms. Divya (II M.Sc. FN)	



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The HoD and Chairman of the department of Food Science and 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 member/s to attend the meeting and requested to grant leave of absence.

1. Dr. P. Sathyamurthy (Industrial Expert)
2. Mr. K. Gowtham Palaniswamy (Meritorious Alumni)
3. Dr. Meera Raman (Member)
3. Mrs. S. Madumitha (Member)

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

Item 17.1: *To review and approve the minutes of the previous meeting held on 16.10.2023.*

The chairman of the Board presented the minutes of the previous meeting held on **16.10.2023** 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 16.10.2023

Item 17.1: *To consider and approve the scheme and syllabi for I semester for the students admitted during the academic year 2024 -2025.*

The chairman presented the detailed Scheme and Regulation for the students admitted from the academic year 2024-25 onwards and syllabi for the I 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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B.Sc. Food Science and Nutrition

Changes Made:

Course Code	Course	Changes & Reason
24FNU1CA	Fundamentals of Food Science	<p>Dr. T. Poongodi Vijayakumar suggested the following changes which were included</p> <ul style="list-style-type: none">• Food groups- 11 food groups, regulatory foods, my plate, mechanism of fermentation and changes occurring during fermentation, fermented Indian foods and classification of millets were included in the Unit I as it is vital for the students to understand all basic food groups and the mode that fermentation helps in food preservation• The concepts of Malting were included in Unit II to learn processing strategy for nutrient enhancement• In Unit III, the topic – Active principles of Spices was included for better understanding the mechanism of bioactive components present in spices• The concepts of Egg- anti-nutrients and effect of cooking on eggs were included in the Unit IV as the knowledge on anti – nutrients are significant for processing or consumption of an egg
24FNU1CB	Chemistry of Foods	<p>Dr. Sylvia Subapriya recommends the following topics and were included</p> <ul style="list-style-type: none">• In the Unit I, the topic structure stages measurement of water activity were included, because the moisture content of a food particle plays a crucial role in preservation.• The concepts of physical and chemical properties of starch and sugar were included in the Unit II in order to understand the physio- chemical reactions in food.• Changes in vegetable protein due to action of heat, acid, alkali were included in Unit IV to make the students aware of the denaturation protein and their effect during



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		processing
24FNU1CP	Food Science (Practical)	<p>Dr.T.Poongodi Vijayakumar suggested to include the following experiments which are based on industrial need</p> <ul style="list-style-type: none"> • Sautéing, braising, common preparation with cereals • Principles of cooking vegetables, common preparation with vegetables, common preparation with fruits. <p>DBT experiments included</p> <ul style="list-style-type: none"> • Determination of juiciness of meat • Determination of over boiling of eggs and Formation of Hydrogen Sulphide

M.Sc. Food and Nutrition

Changes Made:

Course Code	Course	Changes & Reason
24FNP1CA	Advanced Food Science	<p>Dr. A.J. Hemamalini and Dr. Sylvia Subapriya recommend to include the following topics</p> <ul style="list-style-type: none"> • In Unit I, pastries were included for wide spectrum exploration of bakery sector • The concepts of toxins of nuts and oilseeds was included in Unit II as the knowledge on toxins and their effects are significant for processing or consumption • In Unit IV, curd, yoghurt and buttermilk were included under the title milk products for a better understanding on probiotic foods • Meat analogues were included in Unit V for better understanding of meat alternatives.
24FNP1CB	Nutrition Through Life Cycle	<p>Dr. A.J. Hemamalini recommend to include the following topics</p> <ul style="list-style-type: none"> • In Unit II, the concept of complementary feeding was included to balance the daily nutrient requirements • The topics - packed lunches, post school snacks, physical activity and nutrition were included in Unit III for better cognitive development



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		<ul style="list-style-type: none">• In Unit V, Nutrition for armed forces and ADHD (Attention deficit of hyperactive disorder), ASD (Autistic spectrum disorder) were included to emphasize on nutritional needs of special condition
24FNP1CD	Food Chemistry	<ul style="list-style-type: none">• The concepts of water activity in Unit I and chemical properties of plant pigments in Unit V were included because the pigments chemical composition plays a crucial role in processing and preservation of food
24FNP1CP	Food Science and Food Chemistry (Practical)	Dr. Sylvia Subapriya suggested to include the following experiments based on industrial needs <ul style="list-style-type: none">• Dextrinization, malting of cereals• Sensory evaluation of food.
24FNP1DA	Functional Foods and Nutraceuticals	Dr. A.J. Hemamalini suggested to include the following topics <ul style="list-style-type: none">• Bioactive components such as Cholorogenic acid, Gingerol, Resveratol, phospholipids, astaxanthin, zeaxanthin were included in the Unit II• In Unit III, Nutraceuticals of animal and microbial origin were included. To have complete knowledge about the active compounds used as Nutraceuticals to prevent from diseases
24FNP1DB	Food Product Development	Dr.T.Poongodi Vijayakumar suggested to include the following titles are as per the industrial requirement <ul style="list-style-type: none">• In Unit I, the concepts on measures of food• Product success-production, market, customer were included as it is vital to know the purchasing pattern of consumers• Level of Innovation-New product categories. FSSAI Regulations on Development of Food in the Unit II is essential to be in par with the current regulations
24FNP1DC	Harvest Technology of Agricultural Produce	<ul style="list-style-type: none">• Post harvest handling of perishables was included in Unit I as they are easily susceptible to spoilage due to their high levels of moisture



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Resolution:

Resolved to approve the syllabus for the I semester for the students admitted for the academic year 2024 -25.

Item 17.2: *To consider and approve the syllabi for III semester for the students admitted during the academic year 2023-2024.*

The chairman presented the detailed Syllabi for III semester to the students admitted for the academic year 2023-2024 .The members deliberated in detail about the modification required. After discussion it is unanimously decided to adopt the following changes.

Course Code	Course	Changes & Reason
233FN1A3CP	Nutrition Through Life Span	Dr. A.J. Hemamalini and Dr. Sylvia Subapriya recommend to include the following experiments under DBT Star Status <ul style="list-style-type: none">• Planning and preparing a weaning food for special children• Planning and preparing recipes on galactagogues rich foods

Resolution:

Resolved to retain the existing syllabus of 2022-23 batch without any modification for the students admitted for the academic year 2023-24.

Item 17.3: *To consider and approve the changes, if any, in the syllabi for V semester for the Students admitted during the academic year 2022-2023.*

The Chairman presented the detailed syllabi for the V semester for the students admitted from the academic year 2022-2023. The details of changes made also presented as follows.

Changes Made:

Course Code	Course	Changes & Reason
223FN1A5CA	Food Preservation	Dr. T. Poongodi Vijayakumar suggested the following topics which were included <ul style="list-style-type: none">• Spices and condiments were included under the title preservation of fresh food produce in Unit – I – to emphasize on their effect of microbial inhibition



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		<ul style="list-style-type: none">• The concepts of bio-preservation and preservation through fermentation were included in Unit – II, for better understanding of various methods of food preservation• The topics hygienic design and sanitation were added under the title food manufacturing control in Unit – V for sequential learning purposes• In Unit – V, concepts of GMP & HACCP were included to make students aware of the government rules and regulations for a food industry
223FN1A5CB	Fundamentals of Food Microbiology	<p>Dr. Sylvia Subapriya recommended and the following changes were made</p> <ul style="list-style-type: none">• Inhibitory substances and combined effects of factors influencing the microbial growth were included in Unit – I for better correlation of physical, chemical and environmental factors• The Units II, IV & V were rearranged for better understanding of the concepts and sequential learning
223FN1A5CC	Food Processing	<p>Dr. T. Poongodi Vijayakumar recommended to include the following concepts, the recommendations were made</p> <ul style="list-style-type: none">• Minimal processing, cold storage and osmotic dehydration were included in Unit – II to emphasize on the efficiency of different food preservation methods• Meat & poultry processing steps such as curing, smoking, freezing & cryogenic and vacuum packaging were included in Unit – IV for the students to understand the complete processing of meat and meat products
223FN1A5CD	Food Safety and Quality Control	<p>Dr. Sylvia Subapriya and Dr. T. Poongodi Vijayakumar suggested to include the following changes</p> <ul style="list-style-type: none">• Unit – II was completely revised by including topics such as CAC, AGMARK, ISI, ISO, AGMARK, FSSAI, APEDA, JECFA & FSSA act under the title - Regulation in quality control• GHP in processing and documentation under the title pre-requisite programs were included• Types of hazards and HACCP teams were



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		<p>included in Unit – IV as it is vital for producing safe food</p> <ul style="list-style-type: none">• In Unit – V, determination and compliance of finished product quality with FSSAI standards were included to make the students aware of the significance of how FSSAI license helps in producing safe food
223FN1A5CP	Food Preservation (Practical)	<p>Dr. T. Poongodi Vijayakumar suggested to include the following experiments to overcome the current industrial needs</p> <ul style="list-style-type: none">• Prepare a preserved product and evaluate its sensory attributes• Conduct a consumer acceptability trial for a preserved product• Methods of food preservation by osmotic dehydration, sterilization & pasteurization
223FN1A5DA	Post Harvest Technology	<p>Dr. A.J. Hemamalini recommend to include the following topic in each unit which were added</p> <ul style="list-style-type: none">• Elements of post-harvest system, logistics – long and short holding of produce, record keeping system on food supply chain were included in Unit – I as it is important for the students to know the significance of documentation• In Unit – II, types of transport, distribution of agricultural produce, grading and its equipment were included to emphasize on the machinery used and its efficiency in post-harvest technology• In Unit – IV, the concepts of methods to prevent the entry of rats and rodents were included to understand the techniques to reduces the food spoilage in the in-house
223FN1A5DB	Clinical Nutrition	<p>Dr. A.J. Hemamalini recommend to include the following topics</p> <ul style="list-style-type: none">• The FED-FAST cycle concept was included in the Unit II under the heading Regulation of energy balance• Unit IV – Drug-nutrient interaction was changed to co-ordination and regulation of digestive process to get insights into the hormonal and enzymatic regulation of the digestive tract



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		<ul style="list-style-type: none"> • In Unit V, instead of the basic topic, nutrition during metabolic stress was included to get more focus on role of nutrients
223FN1A5DC	Food Commodities	<p>Dr. Sylvia Subapriya and Dr.T.Poongodi Vijayakumar suggested to include the following concepts</p> <ul style="list-style-type: none"> • The concepts of traditional kitchen equipment were included in Unit II to imbibe the knowledge on traditional utensils, that helps to retain the nutrients in cooked food • In Unit IV, maintenance of records was included under the sub topic basic stocks and storage. <p>In order to sensitize about the documents to be maintained in food storage industry</p>
223FN1A5GA	Food Preservation(GE)	<ul style="list-style-type: none"> • In Unit II, the concepts of preparation of jelly, marmalade, syrups were included • The concepts of sterilization, blanching and drying were included in Unit IV for better understanding of the food preservation concepts

New Courses Introduced

Course Code	Course	Changes & Reason
223FN1A5SP	Food Processing and Quality Control Practical	<ul style="list-style-type: none"> • Dr. Sylvia Subapriya suggested to include the course to emphasize on the importance of skill development in food safety and quality analysis

Courses Removed

Course Code	Course	Changes & Reason
223FN1A5SA	Food Hygiene and Sanitation	<ul style="list-style-type: none"> • As Food Processing and Quality Control Practical course for skill enhancement, this course has been removed

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabi for the V Semester for the students admitted for the academic year 2022-2023.



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Item 17.4: *To consider and approve value added courses brought forward by the Chairman and the members of the board.*

The following UG - Diploma, Value-Added Certificate Course and skill oriented courses were included

- Diploma in Food Safety and Quality Control
- Novel Food Product Development
- Food Quality Control
- Community Nutrition
- Diet Counseling,
- HACCP Certification

Resolution:

Resolved to approve the Value-Added Certificate Course for the academic year 2024-2025.

Item 17.5: *To approve the panel of examiners for question paper setting and evaluation of answer scripts for the odd semester of the academic year 2024-2025.*

The Chairman presented the panel of examiners for question paper setting, question paper scrutiny, conduct of practical and theory examination are submitted to COE for exam related works.

Resolution:

Resolved to approve the panel of examiners for question paper setting and evaluation of answer scripts, conduct of practical and theory examination for the odd semester of the academic year 2024-2025.

Item 17.6: *To consider and approve any other item brought forward by the Chairman and the members of the board.*

No other item was brought forward.



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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 and Chairman – Food Science and Nutrition.

Date: 05.04.2024

(Dr.D.Sridevi)

Dr. B. Chakravarthy
Dean, Department of Food Science & Nutrition
Dr. N.G.P. Arts and Science College
Coimbatore - 641 048



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Syllabus Revision

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNU1CA – Fundamentals of Food Science

Unit	Existing	Changes
I	Introduction to Food Science: Food groups- 4 (ICMR), 5, 7 and, functional food groups-energy yielding, body building protective and regulatory foods (only sources), food pyramid and my plate. Methods of cooking: Objectives of cooking. Cooking methods – Dry heat and moist heat methods, microwave and solar cooking Cereals: Structure and composition of rice and wheat, parboiled rice, role of cereals in cookery Millets: Nutritive value of Ragi, Jowar and Maize	11 food group regulatory foods my plate Fermentation of Cereal- Mechanism of fermentation and changes occurring during fermentation. Indian fermented foods (idly, dhokla, and bread). Millets: Classification
II	Pulses and legumes: Varieties of pulses, legumes and grams, composition, nutritive value, germination of grain, anti-nutritional factors, cooking quality of pulses. Fruits: Classification, composition and nutritive value, changes during ripening, enzymatic browning and its prevention methods. Vegetables: Classification, composition and nutritive value, selection and preparation for cooking, changes and loss of nutrients during cooking	malting of grain
III	Beverages - Classification, milk based beverages-methods of preparing tea and coffee, fruit based beverages, malted beverages and carbonated non- alcoholic beverages. Fats and Oils: Types of oils, function of fats and oils, fat substitutes Spices and Condiments: Functions and medicinal values of Cumin, Pepper, Fenugreek, Cinnamon, Cloves, Cardamom, Onion, Turmeric, Ginger and Garlic spices. Herbs – Basil, Wheat grass, Aloe vera, Oregano – An overview Difference test-paired comparison and duo –trio test, Rating test –ranking, hedonic, composite scoring test.	Active principle of spices
IV	Milk – Composition and nutritive value, kinds of milk ,physical properties of milk, pasteurization and homogenization of milk, changes in milk during heat processing, preparation of fermented (cheese) and non-fermented (milk powder), role of milk and milk products Egg - Structure, composition, selection, nutritive value,. Evaluation of egg quality uses of egg in cookery, foam formation and factors affecting foam formation	Egg- anti-nutrients Effect of cooking on eggs
V	Meat -Structure, composition, nutritive value, selection of meat, post mortem changes in meat, aging, tenderness and curing. Methods of cooking meat and their effects. Poultry: Classification, composition, nutritive value, selection, methods of cooking. Fish - Structure, composition, nutritive value, selection of fish, methods of cooking and effects	

PERCENTAGE OF SYLLABUS REVISED: 20%

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
<input type="checkbox"/> Social awareness / Environment	<input type="checkbox"/> Constitutional Rights/Human Values/Ethics





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Syllabus Revision (New course)

B.Sc. Food Science and Nutrition

Board: Food Science and Nutrition

Faculty: Bio-Sciences

Semester: I

Course Code/ Name: 24FNU1CB\ CHEMISTRY OF FOODS

Unit	CONTENT
I	Physico-chemical Properties of Foods - Moisture in foods, Hydrogen Bonding ,Structure of water and Ice, States of water, Types of Water - Free Water, Bound Water, Entrapped water, water Activity in Foods - Measurement and control of Water Activity, Determination of Moisture Content in Foods, Dispersion, Sols, Gels, Foams, Colloids and Emulsions.
II	Chemistry of Starch and Sugars - Components of Starch, Swelling of Starch Granules, Gel Formation, Factors affecting Gel Formation, Retro gradation, Syneresis, Dextrinization and Hydrolysis of Starch. Effect of Sugar, Acid, Alkali, and Surface Active Agents on Starch. Sugar - Physical and Chemical Properties of Sugars - Hygroscopicity, Solubility, Sweetness, Chemical Properties - Hydrolysis, Caramelization and Maillard Reaction - Non Enzymatic Browning, Types of Candies, Crystallization, Factors affecting Crystallization of Sugar, Sugar products and Stages of Sugar Cookery.
III	Chemistry of Proteins - Chemistry of Wheat Proteins, Structure, Gluten Formation, Factors affecting gluten formation, Effect of Soaking, Fermentation and Germination of Pulse Proteins, Malting of Pulse Proteins, Protein Denaturation, Properties of Egg Protein, Chemistry of Milk Protein, Protein Changes in Milk, Egg and Meat Proteins during action of heat, Changes in Vegetable Proteins due to Action of Acid, Heat and Alkali.
IV	Chemistry of Fats and Oils - Physical Properties of Fats and Oils - Melting Points, Plasticity and Isomerisation Chemical Properties of Fats and Oils - Rancidity and Polymerization, Modification of Fats - Hydrogenation, Winterization, Emulsification, Tenderization Decomposition of Triglycerides, Shortening Power of Fats, Changes in Fats and Oils during Heating, Smoking Point of oil, Factors Affecting Fat Absorption in Food, Fat Deterioration, Fat Replacers.
V	Chemistry of Pectic Substances , Plant Pigments, Spices and Condiments - Enzymes -Definition, Chemical Classification, Properties of Enzymes, Importance of Enzymes, Enzymatic Browning, Pectins and Phenolic Compounds. Pigments - Types of Plant Pigments - Water and Fat Soluble Pigments, Properties and Food Sources. Properties and Active Principles of Spices and Condiments. Flavour Enhancers.

PERCENTAGE OF SYLLABUS REVISED: 100%

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
<input type="checkbox"/> Social awareness / Environment	<input type="checkbox"/> 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: I

Course Code/ Name: 24FNU1CP - Food Science Practical

Exp. No.	Existing	Changes
1.	Food group- Grouping of foods, discussion on nutritive value	-
2.	Measuring ingredients - Methods of measuring different types of foods – grains, flours and liquids, Determination of edible portion percentage	-
3.	Moist heat methods - Boiling, Simmering, Steaming and Pressure cooking	-
4.	Dry heat methods - baking, Fat as a medium for cooking- shallow and deep fat frying.	Saueting, braising
5.	Cereals - Methods of cooking fine and coarse cereals. Examination of starch	Common preparation with Cereals
6.	Pulses - Cooking of soaked, unsoaked, germination and fermentation of pulses. Common preparation with pulses	-
7.	Vegetables - Experimental cookery using vegetables of different colors and textures.	Principles of cooking vegetables, Common preparation with vegetables
8.	Preparation of beverages soups and salads	-
9.	Fruits - Prevention of darkening in fruits and vegetables. Fruit salad	Common preparation with Fruits
10.	Experimental cookery –cheese curry and cooking vegetables in milk, Coagulation of milk proteins, preparation of paneer, curd. common preparation with milk	-
11.	Fleshy foods Fish, meat and poultry- preparations	-
12.	Experimental cookery of Egg - boiled egg, poached egg. Common preparations with egg.	-

Experiments Under DBT

13.		Determination of juiciness of meat.
14.		Determination of over boiling of eggs and Formation of Hydrogen Sulphide.

Note: Out of 12 – 10 mandatory

PERCENTAGE OF SYLLABUS REVISED: 11%

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
<input type="checkbox"/> Social awareness / Environment	<input type="checkbox"/> Constitutional Rights/Human Values/Ethics





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BoS

17th

Syllabus Revision

M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNP1CA – Advanced Food Science

Unit	Existing	Changes
I	Cereals - Rice - Structure, Composition and nutritive value, Cereal cookery Wheat - Structure, composition and nutritive value. Wheat flour — types, functionality of components, baking qualities, manufacture of bread and cakes. Millets- Jowar, Bajra, Maize and Ragi, Composition and nutritive value and Products	Baked products – pastries
II	Pulses, Fats & Oils - Pulses - Composition and nutritive value, methods of processing – dry and wet processing, vegetable protein mixes, Anti nutritional factors and eliminations Nuts and Oilseeds- Composition and nutritive value, nutritious food mixes from oil seeds Fats and Oil - Nutritional importance of oil and fats, Functions of oil and fats in foods, Sources, nutritional composition, rancidity — types and prevention, role of fat / oil in food preparations.	Nuts & oil seeds – toxins
III	Vegetables & Fruits – Classification, Composition and nutritive value, selection, storage, pigments, browning reactions (Enzymatic and Non-Enzymatic), pectic substances, ripening of fruits, changes on cooking Beverages – Classification: Milk and fruit-based beverages, carbonated nonalcoholic beverages Spices and condiments – Type, uses and role in cookery and medicinal uses Evaluation of foods - Subjective and objective evaluation of foods. Study of proximate constituents.	Spices and condiments – adulteration
IV	Milk & Milk Products and Egg – Milk and milk products- Composition, physical and chemical properties - effects of heat, acid and enzymes, processing of milk – pasteurization, homogenization, types of milk, Milk products – Butter, cheese, milk powder, khoa, ice cream Egg - Structure, composition, grading and selection, effects of heat on egg protein, egg foam (factors affecting foam formation) and role in cookery.	Milk products – curd, yogurt and butter milk
V	Meat, Poultry and Fish – Meat - Structure, composition, postmortem changes, Rigor mortis, Aging and Tenderization of meat, color of meat, changes of meat in cookery and methods of cooking Poultry - Classification, composition, market forms, selection factors and methods of cooking Fish - Classification, composition, kinds of fish, characteristics of fresh fish, fish products and methods of cooking	Meat – meat analogues

PERCENTAGE OF SYLLABUS REVISED: 10%

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<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Social Awareness / Environment
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Syllabus Revision – New Course

M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNP1CB/ NUTRITION THROUGH LIFE CYCLE

Unit	New Course
I	Nutrition in Preconception and Pregnancy Nutrition in Preconception-Introduction, premenstrual syndrome, obesity and fertility, eating disorder and fertility, polycystic ovary syndrome, nutrient intake for pre-conceptual women, factors contributing infertility in female. Nutrition in pregnancy - Stages of gestation, maternal physiological adjustments, weight gain during pregnancy and nutritional requirements for pregnancy, miscarriage, preterm delivery, multi fetal pregnancies, eating disorders and complications of pregnancy.
II	Nutrition in Lactation and Infancy Nutrition in Lactation - Physiological adjustments during lactation, Physiology of milk Production - hormonal controls and reflex action, lactation in relation to growth and health of infants, Breast feeding and problems of breast feeding, nutritional composition of colostrum and mature milk, special foods during lactation, nutritional requirements during lactation. Expressing and storing breast milk, Breast feeding promotion network of India. Nutrition in Infancy - Rate of growth, weight as the indicator, premature infant, feeding premature infants, low birth weight, breast vs. bottle feeding, nutritional allowances, complementary feeding, and weaning foods.
III	Nutrition for Toddlers and School age Nutrition in Toddlers-Physiological and Cognitive development, feeding skill and behavior, common nutrition problems. Nutrition in Preschool Children - Growth and development of preschool children, food habits, nutritional requirements, supplementary foods. Nutrition in School Age – Early and middle childhood, physiological development, nutritional requirements and feeding, packed lunches , post school snacks, physical activity and nutrition.
IV	Nutrition During Adolescence, Adulthood and Old age Nutrition During Adolescence - Physical growth, physiological and psychological changes associated with puberty(menarche and menstruation in girls), nutritional needs, eating disorders - anorexia nervosa, bulimia nervosa, physiological and nutritional problems in adolescent pregnancy and its requirements and complications, physical activity and nutrition. Nutrition during Adulthood — Physiological changes of adulthood Nutrition and work efficiency for maintenance of health, RDA Nutrition for Old Age – senescence and sarcopenia - theories of ageing, physiological changes, Socio economic and psychological factors — geriatric foods and nutritional requirements, factors affecting food intake, institutionalized changes in old age.
V	Nutrition for Sports and Special Condition Sports and Exercise Fitness - Physical fitness assessment — cardio respiratory fitness, assessment of body composition. Role of carbohydrate, fat and protein as a fuel for exercise, fluid and electrolyte balance during prolonged exercise, nutritional requirements in sports, dietary intake before, during and after exercise. Concept of aerobic and anaerobic exercises, Nutrition for higher altitudes, Nutrition for expeditions and space voyage, Nutrition for armed forces, Nutrition for special children- ADHD and ASD.

PERCENTAGE OF SYLLABUS REVISED: 100 %

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Syllabus Revision – New Course

M.Sc. Food and Nutrition

Board: Food Science and Nutrition

Faculty: Bio-Sciences

Semester: I

Course Code/ Name: 24FNP1CC/ NUTRITIONAL BIOCHEMISTRY

Unit	Content
I	Carbohydrates Carbohydrates – classification, functions. Glycolysis, TCA Cycle, HMP Shunt and Energy Production, Glycogenesis, Gluconeogenesis. Renal threshold for Glucose. Inborn Error of Carbohydrate Metabolism – Lactose Intolerance, Galactosemia.
II	Fatty Acids Fatty Acids - Classification, Functions and Oxidation of Saturated and Unsaturated Fatty Acids, Biosynthesis of Cholesterol, Structure and Functions of Lecithin, Cephalin. Inborn errors of Fat Metabolism – Niemann-Pick Disease, Gouchers Disease
III	Protein Protein- Classification, Function & Metabolism of Protein, Denaturation, Transamination, Deamination, Decarboxylation, Urea Formation and Protein Synthesis. Amino acids – Classification, Function & Metabolism of Amino acids, phenylalanine, methionine and tryptophane. Inborn errors of Amino acids – maple syrup urine disease, phenyl ketonuria.
IV	Nucleic acids Nucleic acids – structure, function and properties of DNA and RNA. Biosynthesis and breakdown of purine and pyrimidine nucleotides. Assay Techniques: Bioassay techniques, microbiological assay of vitamins. ELISA.
V	Techniques in nutritional biochemistry Techniques in nutritional biochemistry - Separation of sugars and amino acids by chromatography. Electrophoresis separation of proteins. Colorimetry and spectrophotometer - principle and procedures. pH meter – working and application. Principle and procedure of operation of GC,HPLC and HPTLC. Elemental analysis by atomic absorption spectroscopy and flame photometry

PERCENTAGE OF SYLLABUS REVISED: Nil

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17th

Syllabus Revision

M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNP1CD – Food Chemistry

Unit	Existing	Changes
I	Physico-chemical properties of water and foods Structure and properties of water and ice, types of water, solutions and concept of water activity and Food spoilage, Sorption phenomena. Gels: Structure, formation, strength, types and permanence Emulsions: formation, stability, surfactants and emulsifiers, Foams: Structure, formation and stabilization	concept of water activity
II	Chemistry of Starch and Sugars Reactions of mono- and oligosaccharides, use of polysaccharides in foods: non-starch polysaccharides: cellulose, hemicelluloses, pectins, gums (gum arabic, guar gum, xanthan gum), agar, alginates, carrageenan Starch: structure, properties of amylose and amylopectin, effect of processing gelatinization, Characteristics of some food starches. Effects of ingredients and conditions on gelatinization- retrogradation, polysaccharide hydrolysis, sugar alcohols, , sugar substitutes.	
III	Chemistry of Proteins Amino acids, peptides and proteins - structure, physicochemical properties, functional properties, chemical and enzymatic modifications - denaturation and other chemical changes, processing induced physical, chemical and nutritional changes, texturized proteins, protein isolates, concentrates.	
IV	Chemistry of Fats and Oils Classification, distribution, composition, physical and chemical properties. Effect of processing on chemical structure and physical properties; functional properties of fat and uses in food preparations, inter-esterification of fats. Lipids exposed to frying conditions and hydrogenated fat. Lipid-protein complexes, emulsions. Fat deterioration and antioxidants and fat substitutes.	Distribution
V	Chemistry of Pectic Substances, Plant Pigments, Spices and Condiments Pectins, phenolic components, enzymatic browning in fruits and vegetables, volatile compounds from vegetables during cooking, chemical properties of plant pigments – water and fat soluble pigments, properties and active principles in spices and condiments.	chemical properties

PERCENTAGE OF SYLLABUS REVISED: 20%

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17th

Syllabus Revision – Practical Course

M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNP1CP – Food Science and Food Chemistry

Exp. No.	Existing	Changes
1.	Gelatinization of Starch, Retrogradation and Syneresis	Dextrinization, Malting of cereals.
2.	Microscopic examination of uncooked and gelatinized	Starch
3.	Gluten Formation	-
4.	Effect of Soaking, germination and fermentation of Pulses	-
5.	Enzymatic Browning and Methods of Prevention	-
6.	Effect of acids, alkali and heat on water soluble and fat-soluble pigments	
7.	Scum formation, Boiling over and scorching of milk	-
8.	Coagulation of egg white and egg yolk, Boiled Egg, Poached Egg, Omelets, Custards, Cake and Mayonnaise	Testing freshness of egg-
9.	Changes observed in cooking meat, fish and poultry, testing the tenderness of meat	-
10.	Smoking Temperature of different fats, Factors affecting absorption of fats	-
11.	Stages of Sugar Cookery, Preparation of Fondant, Fudge, Caramel and Toffee	-
12.	Coagulation and precipitation of milk proteins	Sensory Evaluation of Food

Note: Out of 12 – 10 mandatory.

PERCENTAGE OF SYLLABUS REVISED: 12.5 %

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
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17th

Syllabus Revision - New Course

M.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNP1DA- Functional Foods and Nutraceuticals

Unit	Content
I	Introduction to Nutraceuticals and Functional Foods Nutraceutical- Definition, Classification - Dietary supplements, Functional foods, Historical perspective, scope and future prospects, applied aspects of the Nutraceutical Science, Sources of Nutraceuticals.
II	Properties, structure and functions of various Nutraceuticals Glycosides, Isoprenoid derivatives, Glucosamine, Octacosanol, Flavonoids, Carotenoids, Polyunsaturated fatty acids, Lecithin, Choline and Spingolipids, Phospholipids, Lycopene, Carnitine, Resveratol, Curcumin, Ellagic acid, Astaxanthin, Zeaxanthin, Cholorogenic acid, Gingerol and Ornithine alpha ketoglutarate, Phytoestrogens, Organosulphur compounds as neutraceuticals.
III	Nutraceuticals of plant, animal and microbial origin Plant secondary metabolites, classification and sub-classification - Alkaloids, phenols, Terpenoids, extraction and purification, applications, Concept of Animal metabolites - Sources and extraction of nutraceuticals of animal origin, Examples: chitin, chitosan, glucosamine, chondroitin sulphate, Essential Fatty acids - EPA, DHA, CLA and other polysaccharides of animal origin, Nutraceuticals of microbial origin, uses and applications in preventive medicine and treatment.
IV	Functional Foods and its applications Definition, Relation of functional foods and Nutraceutical (FFN) to foods and drugs, applications of herbs to functional foods, Concept of free radicals and antioxidants; Nutritive and Non-nutritive food components with potential health effects, Soy proteins and soy isoflavones in human health; Role of nuts in prevention of cardiovascular disease. Functional foods from wheat and rice and their health effects. Role of Dietary fibers in disease prevention; Vegetables, Cereals, milk and dairy products as Functional foods, Health effects of prebiotics, probiotic and symbiotic foods and effects
V	Food as remedies Nutraceuticals in treatment for cognitive decline, Arthritis, Neurological disorders, circulatory problems, hypoglycemia, Nephrological disorders, Liver disorders, Osteoporosis and Ulcers etc, Nutraceutical rich supplements e.g. Bee pollen, Caffeine, Green tea, Lecithin, Mushroom extract, Chlorophyll, Kelp and Spirulina. Nutrigenomics - concept of personalized and precision nutrition. Use of Nanotechnology in functional food industry.

PERCENTAGE OF SYLLABUS REVISED: 100 %

<input checked="" type="checkbox"/> Skill Development	<input checked="" type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
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17th

Syllabus Revision

M.Sc. Food and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: I

Course Code/ Name: 24FNP1DB-FOOD PRODUCT DEVELOPMENT

Unit	Existing	Changes
I	New product development - Definition and classification, characterization and factors shaping new product development. market place influence.	Measures of Food Product Success-Production, Market, Customer.
II	Formulation of new product development - Formulation of new product development for infants, preschool, sports person, elderly- Selection of raw materials, portion size, standardization methods, calculation of nutritive values, cost production, shelf life.	Phases of New product development Level of Innovation-New product categories. FSSAI Regulations on Development of Food.
III	Sensory evaluation – Analytical Test - Conduct a sensory Evaluation Test - Designing score card, objective evaluation, Instruments used for texture evaluation.	Establishing sensory panels – Designing testing facilities
IV	Packaging – Packaging - Types of packing materials and its characteristics. New product development - patent, patent laws, international code for Intellectual property rights (IPR).	Formulation of new product development Suggested Retail Price (SRP)
V	Marketing – Concept of market and marketing - Approaches to study marketing and marketing functions, market structure, market efficiency and market integration. Role of government in promoting agricultural marketing. GST for newly developed product	Packaging and Marketing Labelling Concept of market and marketing

PERCENTAGE OF SYLLABUS REVISED: 48 %

<input checked="" type="checkbox"/> Skill Development	<input checked="" type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
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17th

Syllabus Revision

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Semester: I

Board: Food Science and Nutrition

Course Code/ Name: 24FNP1DC/ HARVEST TECHNOLOGY OF AGRICULTURAL PRODUCE

Unit	Existing	Changes
I	<p>Post harvest Technology</p> <p>Introduction to Post Harvest Technology - Definition, importance.</p> <p>Governmental measures to augment food production- need for food conservation. Food loss in the post harvest period, loss in the field, threshing yard, storage, marketing loss</p> <p>Role of Post Harvest Technology in combating malnutrition in India</p>	Post harvest handling of perishables
II	<p>Agent causing food loss</p> <p>Agents Causing Food Losses - Physical agents (moisture, temperature), Chemical losses, biological losses- insects- insects attacking food grains - types and life cycle, damage caused to food grains and detection of insect infestation, rats and rodents, birds, animals- Nature of damage, identification</p>	
III	<p>Spoiling Agents</p> <p>Control of Spoilage Agents - Importance and methods of sanitary handling, physical, chemical, biological and other means of control of insects, rats and rodents and birds Insect control methods- Physical methods and chemical methods including fumigation techniques</p> <p>Handling and Transport of Food Commodities - Traditional and improved methods, Nutrient losses in spoiled grains and National program to save grains</p>	
IV	<p>Storage and grains</p> <p>Storage of Grains - Importance of storage structures- requirements, traditional and modern and underground and above ground storage and their improvements, PDS.</p>	
V	<p>Food Processing</p> <p>Food Processing of Selected Food Items – wheat, rice, breakfast cereals, pulses, oilseeds. Agencies Controlling Food Losses - Role of SGC, FCI, CWC, SWC, IGSI in controlling food losses</p>	EPA

PERCENTAGE OF SYLLABUS REVISED: 5%

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BoS

17th

Syllabus Revision –New Course

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

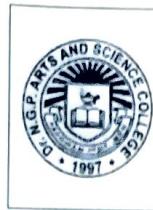
Course Code/ Name: 223FN1A5CA – Food Preservation

Unit	Contents
I	Preservation of fresh food produce – Food preservation - definition, principles and methods. Postharvest physiology of fruit and vegetables, postharvest handling and minimal processing of fruits and vegetables, grains and pulses, fresh fish and seafood, meat and meat products, milk, spices and condiments.
II	Preservation using preservatives and microbes – Food preservation using preservatives - natural antimicrobials, antioxidants, additives and preservatives, biopreservatives, mold inhibitors and fermentation.
III	Preservation by controlling water, structure and atmosphere – Role of water activity in preservation. Drying and dehydration of foods - principles, advantages, limitations and applications. Glass transition and state diagram of foods. Food preservation using membranes, Encapsulation and stabilization. Modified and controlled, atmosphere packaging of produce.
IV	Preservation using heat and energy – Thermal Processing - sterilization, pasteurization, blanching, canning and bottling, microwave and retort process - principles, advantages, limitations and applications. Freezing - Principles of freezing, fast and slow freezing. Freeze drying and refrigeration - working, advantages and disadvantages, thawing, and cold storage. Novel processing technologies - irradiation, ohmic heating, pulsed electric field, ultrasound processing, high pressure processing, hurdle technology and cold plasma processing.
V	Enhancing food preservation by indirect approach – Food Packaging - packaging as a preservation technique, types of packaging materials used for foods, food packaging interaction. Food manufacturing control - hygienic design and sanitation, HACCP and GMP, Commercial considerations - managing profit and quality.

PERCENTAGE OF SYLLABUS REVISED: 100%

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Syllabus Revision

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

Course Code/ Name: 223FN1A5CB – Fundamentals of Food Microbiology

Unit	Existing	Changes
I	Food and Microorganisms Importance and types of microorganisms in food industry - Bacteria, Mold and yeast, Scope of food microbiology. Factors affecting the growth of microorganisms in food - Ph, moisture, temperature, oxidation - Reduction potential, Nutrient content, Inhibitory substances.	Combined effects of factors
II	Microbiology and Food Sanitation Food sanitation - control and inspection, microbiological criteria and food safety. Quality Assurance - Microbiological quality standards of food. Food Safety objectives, Good Manufacturing Practices (GMP), Good Hygiene Practices (GHP) and Hazard Analysis and Critical Control Point (HACCP).	Changed as UNIT -V
III	Microorganism as a Food Single cell protein, algae as food and Mushroom, Concept of probiotics, prebiotics and symbiotics. Manufacture of fermented foods, Fermented dairy products - Yoghurt and cheese. Fermented plant products - Bread, sauerkraut and pickles. Fermented beverages - types of wine and beer. Fermented meat products - Sausages. Industrial importance of yeasts. Oriental Fermented Foods.	Oriental Fermented Foods Industrial importance of yeasts
IV	Contamination, Preservation and Spoilage of different food General principles underlying spoilage - causes of spoilage, classification of food based on spoilage. Contamination, preservation and spoilage -cereals and cereal products, sugar and sugar products, meat and meat products, vegetables and fruits, milk and milk products and canned foods.	Changed as UNIT -II
V	Food Poisoning Food borne intoxication - Staphylococcus, clostridium, <i>Bacillus cereus</i> , <i>Vibrio parahaemolyticus</i> and <i>Campylobacter jejuni</i> . Food borne Infections - <i>E.Coli</i> , <i>Salmonella</i> , <i>Shingella</i> , and <i>Listeria monocytogenes</i> . Algal toxins and Mycotoxins.	Changed as UNIT -IV

PERCENTAGE OF SYLLABUS REVISED: 20%

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17th

Syllabus – New Course

B.Sc. Food and Nutrition

Board: Food Science and Nutrition

Faculty: Bio-Sciences

Semester: V

Course Code/ Name: 223FN1A5CC - Food Processing

Unit	Content
I	Cereals and Pulses Processing Paddy Processing - Types, milling of rice, by products of rice and their utilisation. Wheat processing - Milling of wheat, by products of wheat, extruded products. Millet processing - Types of millet and its processing. Innovative Millet Products. Pulse processing - Wet and dry processing, protein concentrates and protein isolates. Development of low cost protein foods and snacks.
II	Milk and Edible Oils Processing Processing of Milk and milk products - Kinds of milk, Cheese and its types, butter, Probiotic milk products - Yoghurt, Kefir, Indigenous Milk products - Paneer, khoa, curd, ghee. Frozen milk products - Ice cream. Technology of oil seeds - Processing of edible oils, vegetable oils, by products of edible oil processing.
III	Vegetables and Fruit Processing Vegetable and fruit processing - Minimal processing, Cold storage, Drying techniques - drum drying, vacuum drying, freeze drying, infra red drying, oven drying, foam mat drying, solar drying and mechanical dehydration - use of kiln drier and tunnel drier, osmotic dehydration.
IV	Processing of Meat, Poultry, Egg and Fish Meat and poultry processing - Curing, smoking, freezing and cryogenic and vacuum packaging, Egg - Whole egg powder, egg yolk powder, Fish - Fish protein concentrate, fish protein isolate, fish meal and fish oil.
V	Processing of beverages and spices Non - alcoholic beverages - Manufacturing process of tea and coffee, Processing of cocoa bean into cocoa powder, manufacture of dark chocolate. Alcoholic beverages - Manufacturing process of Beer and wine. Spices - processing, grading specifications of spices, manufacturing process of spice oil and oleoresin.

PERCENTAGE OF SYLLABUS REVISED: 100 %

<input type="checkbox"/> Skill Development	<input checked="" type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input checked="" type="checkbox"/> Social Awareness / Environment
<input checked="" type="checkbox"/> Innovations	<input type="checkbox"/> Constitutional Rights/Human Values/Ethics





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BoS

17th

Syllabus Revision (New course)

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

Course Code/ Name: 223FN1A5CD\FOOD SAFETY AND QUALITY CONTROL

Unit	CONTENT
I	Food safety and Quality control- Food Safety - definition of food safety and food spoilage, factors affecting food Safety and food spoilage. Quality control- definition of quality control, Principles of Quality control of food, Quality Assurance-Raw material control, process control and finished product inspection.
II	Regulation in Quality Control- Codex Alimentarius, ISO, ISI,AGMARK,FSSAI-Food Safety Act 2006, Food Safety Rules and Regulation, APEDA,JECFA
III	Pre-requisite Programs- GHP - Personal hygiene – occupational health and safety specification, Food Plant Sanitation Management - Plant facilities construction and maintenance - exterior of the building- interior of the building- equipment's. GHP in Processing, Storage, transportation, traceability, recalling procedures, training and Documentation.
IV	HACCP- HACCP principles- Types of Hazards, HACCP team, Conduct a hazard analysis, CCP identification, establish critical limits for each CCP, establish CCP monitoring procedures, establish corrective actions procedures, establish procedures for HACCP verification and validation, documenting the HACCP Program.
V	Quality evaluation of foods- Determination and Compliance of finished product quality with FSSAI Standards, assessment of food quality, Panel selection, sensory Laboratories, Subjective and Objective method of evaluation

PERCENTAGE OF SYLLABUS REVISED: 100%

<input checked="" type="checkbox"/> Skill Development	<input checked="" type="checkbox"/> Entrepreneurial Development
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Syllabus Revision – Practical Course

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

Course Code/ Name: 223FN1A5CP – Food Preservation (New Practical Course)

Exp. No.	Contents
1.	Prepare a preserved product and evaluate its sensory attributes
2.	Conduct a consumer acceptability trial for a preserved product
3.	Methods of food preservation by sugaring
4.	Methods of food preservation by salting
5.	Methods of food preservation by pickling
6.	Methods of food preservation by canning and bottling
7.	Methods of food preservation by drying
8.	Methods of food preservation by osmotic dehydration
9.	Methods of food preservation by freezing and refrigeration
10.	Methods of food preservation by sterilization and pasteurization
11.	Methods of food preservation by fermentation
12.	Methods of food preservation by smoking
Experiments under DBT	
13.	Preservation of foods by fats – confit & sous vide method
14.	Preservation of foods using protein based edible coatings

Note: Out of 12 – 10 mandatory

PERCENTAGE OF SYLLABUS REVISED: 100%

<input checked="" type="checkbox"/> Skill Development	<input checked="" type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
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Syllabus Revision– New Course

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

Course Code/ Name: 223FN1A5DB - Clinical Nutrition

Unit	New Course
I	Integration and regulation of metabolism – Energy homeostasis in the cell: regulatory enzymes. Integration of Carbohydrate, lipid, and protein metabolism: interconversion of fuel molecules, energy distribution among tissues such as liver, muscle, adipose tissue, brain, RBCs, kidneys.
II	Regulation and influences of energy balance – The FED - FAST cycle (The Fed state, The Post-absorptive state, The Fasting state, The Starvation state). Hormonal regulation of metabolism (Insulin, Glucagon, Epinephrine, Cortisol, Growth Hormone, Adiponectin). Hormonal influences (Leptin, Insulin, Adiponectin, Ghrelin, other anorexigenic hormones). Lifestyle influences.
III	Water and electrolytes balance - Water functions, body water content and distribution, water losses, sources and absorption. Extracellular fluid volume, osmolarity and hormonal controls (Vasopressin, Renin-Angiotensin-Aldosterone System, and sodium balance, Natriuretic peptides).
IV	Coordination and regulation of the digestive process – Regulation of gastric secretions. Effects of selected gastrointestinal hormones/peptides on gastrointestinal tract secretions and motility. Regulation of gut motility and gastric emptying, Regulation of Intestinal Motility and Secretions. Regulation of Pancreatic Secretions. Colonic Secretions and Motility and Their Regulation. Neural regulation, regulatory peptides of the digestive system.
V	Stress Management – Physiologic-Metabolic response to stress. Management of Stress through Nutrients: Complex carbohydrates, Omega 3 fatty acids, Proteins, Vitamin C, Vitamin B, Magnesium, Selenium. Stress-busting foods.

PERCENTAGE OF SYLLABUS REVISED: 100 %

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
<input type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
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Syllabus Revision

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: III

Course Code/ Name: 223FN1A5DC - Food Commodities and Preparation

Unit	Existing	Changes
I	Introduction to Food Commodities Introduction to Food Commodities – Definition, and Classification of Commodities food commodification in the early markets, raise of commodity exchanges and their impact, Food commodities - cereals, pulses dairy, meat, fruits and vegetables, Potatoes, Poultry, eggs and sugar. Handling and Transport of Food Commodities - Traditional and improved methods, Nutrient losses in spoiled grains and National program to save grains.	Pulses
II	Kitchen and kitchen equipments Kitchen – Definition, parts, Different Positions, Designing a kitchen, Functions of kitchen. Kitchen equipments – Traditional and Modernized kitchen equipments, Culinary hand tools – Importance, Functions and safety measure	Traditional Kitchen Equipments
III	Cooking Skills, Techniques and Safety Cooking Skills – Equipment operating knowledge and handling skills. Cooking Techniques – Classification of Cooking techniques, Importance of cooking techniques. Safety – Safety hazards, employ preventive safety measures, safe work habits.	cooking techniques
IV	Preparation and processing of foods Preparation of foods – selection of raw ingredients. Employment of preliminary methods - cleaning, grading, sorting, Processing of foods, utilization of basic stocks and storage. Maintanence of records.	Maintanence of records.
V	Portion control and personal hygiene Portion control – workflow, plating and garnishing principles. Personal hygiene – principles, Importance of personal hygiene, points to be noted while entering the kitchen.	Personal hygiene – Principles

PERCENTAGE OF SYLLABUS REVISED: 5%

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
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Syllabus Revision – Practical Course

B.Sc. Food Science and Nutrition

Board: Food Science and Nutrition

Faculty: Bio-Sciences

Semester: V

Course Code/ Name: 223FN1A5SP – Food Processing and Quality Control (New Practical Course)

Exp. No.	Contents
1.	Determination of physical dimensions of cereals and pulses
2.	Estimation of pH and titratable acidity of a fruit
3.	Estimation of total solids in milk
4.	Analyzing the presence of antioxidants in processed foods
5.	Determination of rancidity in oil using Kries test
6.	Minimal processing of fresh vegetable produce
7.	Determine the brix value and relative density of sugar rich foods
8.	Determine the quality index of an egg
9.	Analyze the tenderness of poultry meat with and without tenderizer
10.	Detect the common adulterants present in various foods
11.	Determination of cooking properties of raw and parboiled millets
12.	Determination of rehydration ratio of dehydrated foods
	Experiments under DBT
1.	Analyzing the texture of processed foods using TPA & Viscometer
2.	Detection of non-permitted food additives in market food samples

Note: Out of 12 – 10 mandatory

PERCENTAGE OF SYLLABUS REVISED: 100%

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
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Syllabus Revision

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

Course Code/ Name: 223FN1A5DA - Post-Harvest Technology

Unit	Existing	Changes
I	Introduction to Post-Harvest Technology - Introduction to Post Harvest Technology - Definition, importance, post-harvest system. Scenario of Food Processing and Post Harvest Management-APC, Cold Storages, Food Parks, Agri Export Zones.	Elements of Post-Harvest System, Logistics-Long & Short Holding Produce, Record Keeping System on food supply chain.
II	Harvesting and Field Handling - Harvesting Time-Maturity Indices, Ethylene, Harvesting Techniques and Operations-Hand Harvesting, Machine Harvesting, Transport -Transport from the farm Level.	Types of Transport, distribution of agricultural produce, Grading and its Equipment's
III	Packinghouse and storage - Packing house- Need, Packhouse Operations, Storage- Principles, Types of Storage operations, Factors affecting storage, Storage structures and Temperature for fruits, vegetables and root crops, milk, and meat products. Grains- Underground & Above ground storage.	
IV	Food Loss Agent causing & Control of food Loss - Food loss in the post-harvest period-Types of Food Loss, Agents Causing Food Losses - Physical agents (moisture, temperature), Chemical losses, biological losses- insect infestation, rats and rodents, birds, animals, and Control of Spoilage Agents- Fumigation..	Post-Harvest Loss and its Control Methods to prevent the entry of rats and rodents. Controlling the inhouse conditions.
V	Agencies controlling Food Losses - MOFPI-Integrated Cold Chain and Value Addition Infrastructure Scheme- Objectives and Components, Food Corporation of India- Godown, Functions of Central Warehouse Corporation, State Warehouse Corporation, Public Distribution System.	Post-Harvest Distributions

PERCENTAGE OF SYLLABUS REVISED: 47 %

<input checked="" type="checkbox"/> Skill Development	<input checked="" type="checkbox"/> Entrepreneurial Development
<input checked="" type="checkbox"/> Employability	<input type="checkbox"/> Gender Sensitization
<input type="checkbox"/> Intellectual Property Rights (IPR)	<input type="checkbox"/> Innovations
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Syllabus Revision – New Course

B.Sc. Food Science and Nutrition

Faculty: Bio-Sciences

Board: Food Science and Nutrition

Semester: V

Course Code/ Name: 223FN1A5GA/ FOOD PRESERVATION

Unit	New Course
I	Food Preservation Food Preservation- Definition, importance of food preservation, principles and methods of preservation.
II	Preservation by Sugar Preservation by addition of Sugar- General principles, Preparation of Jam, Jelly, Marmalade, Squash, Syrups.
III	Preservation by Salt Preservation by addition of Salt- General principles, Preparation of Pickles, Sauerkraut, Dill pickles.
IV	Preservation by High temperature Preservation by High temperature - Principles, Pasteurization, Sterilization, Blanching, Canning, Drying and Dehydration.
V	Preservation by Low temperature Preservation by Low temperature - Principles, Refrigeration, Freezing, Freeze drying.

PERCENTAGE OF SYLLABUS REVISED: 100 %

<input checked="" type="checkbox"/> Skill Development	<input type="checkbox"/> Entrepreneurial Development
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ATTENDANCE OF SEVENTEENTH BOARD OF STUDIES MEETING

Faculty: Bio Sciences

Board: Food Science and Nutrition

VENUE : Room no:1512 B-1Block
DATE : 05/04/2024
TIME : 10.00 am

The following members were present for the Board of Studies meeting

S.No.	Name	Designation	Signature*
1.	Dr. D. Sridevi Professor and Head Department of Food Science & Nutrition Dr. N.G.P. ASC	Chairman	
2.	Dr. T. Poongodi Vijayakumar Professor and Head Department of Food Science & Nutrition Periyar University Salem – 11	VC Nominee	
3.	Dr.M.Sylvia Subapriya , Professor and Head, Department of Food Science and Nutrition, Avinashilingam University For Women, Coimbatore-641043.	Subject Expert	
4.	Dr. A. J. Hemamalini Assistant Professor & Head Department of Clinical Nutrition and Dietetics Sri Ramachandra Institute for Higher Education and Research Chennai,	Subject Expert	
5.	Dr.P. Sathya moorthy , Chairman,Moon Foods & Dr. Yes Aar Team, Sangagiri Main Road,No.155/10, Kollapatti, Animoor PO, Tiruchengode- 637214	Industrial Expert	ABSENT





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6.	Gautham Palaniswamy Chief Innovation Officer and Manager, Sathyabama TBI, Sathyabama Institute of Science and Technology, Chennai – 600119	Alumni	ABSENT.
7.	Dr. N. Kuppuchamy Associate Professor and Head Department of Tamil Dr. N.G.P. ASC	Co-opted Member	
8	Dr.A.Hazel Verbina Professor and Head (i/c) Department of English Dr. N.G.P. ASC	Co-opted Member	
9	Dr. M. Suganthi Associate Professor and Head Department of Chemistry Dr. N.G.P. ASC	Co-opted Member	
10	Dr. S. Gowri Professor and Head Department of BioChemistry Dr. N.G.P. ASC	Co-opted Member	
11	Ms. Haritha Sri III B. Sc Department of Food Science & Nutrition Dr. N.G.P. ASC	UG-Student Representative	



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12	Ms.Divya II M. Sc Department of Food Science & Nutrition Dr. N.G.P. ASC	PG-Student Representative	<i>Divya.</i>
13	Dr. Meera Raman Dean – BioScience& Applied Science Dr. N.G.P. ASC	Member	<i>ABSENT.</i>
14	Ms. M. Anjali Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>Anjali</i>
15	Dr. D. Jancy Rani Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>D. Jancy Rani</i>
16	Mrs. P.P.Abbirami Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>P.P.Abbirami</i>
17	Ms. M. Rakeshwari Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>Rakeshwari</i>
18	Ms. G. Priyaalini Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>Priyalini</i>
19	Mrs. S.Madumitha Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>ON-DUTY</i>
20	Mrs. U.Rasikha Assistant Professor Department of Food Science & Nutrition Dr. N.G.P. ASC	Member	<i>U.Rasikha</i>

Date:05/04/2024



(Dr. D SRIDEVI)

BoS Chairman/HoD
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