Re-Accredited 'B++' 2.86 CGPA by NAAC
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વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
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ક્રમાંક :એસ./પરિપત્ર/૧૭૧૦૮/૨૦૨૪
તા.૦૯/૦૮/૨૦૨૪

પ્રતિ,
આચાર્યશ્રી,
શેઠ પી.ટી. મહિલા કોલેજ ઓફ આર્ટસ એન્ડ હોમસાયન્સ,
વનિતા વિશ્રામ કોલેજ કેમ્પસ,
અઠવાગેટ,
સુરત.

વિષયઃ– બી.એસસી. હોમસાયન્સ સેમ.– ૧ અને ૨ નો અભ્યાસક્રમ બાબત.

સુજ્ઞશ્રી,

સવિનય વિષય પરત્વે જણાવવાનું કે, શૈક્ષણિક વર્ષ–૨૦૨૩–૨૪ થી અમલમાં આવેલ NEP 2020 અંતર્ગત B.Sc. Home Science Semester -1 અને ૨ અભ્યાસક્રમ હોમસાયન્સ વિષયની અભ્યાસ સમિતિના ચેરમેનશ્રીએ અભ્યાસ સમિતિવતી અને વિજ્ઞાન વિદ્યાશાખાના અધ્યક્ષશ્રીએ વિદ્યાશાખાની મંજૂરીની અપેક્ષાએ વિદ્યાશાખા વતી મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણને એકેડેમિક કાઉન્સિલની તા.૦૧/૦૩/૨૦૨૪ ની સભાનાં ઠરાવ ક્રમાંકઃ૧૦૪ અન્વયે માન. કુલપતિશ્રીને આપેલ સત્તા અંતર્ગત પશ્ચાદવર્તી અસરથી મંજૂર કરેલ છે. જેની આથી જાણ કરવામાં આવે છે.

કુલસચિવ

પ્રતિ,
૧) અધ્યક્ષશ્રી, વિજ્ઞાન વિદ્યાશાખા,
૨) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.

.....જાણ સારૂ.

SCIENCE FACULTY

B.Sc. Home Science (Major: Food Science & Nutrition)

New Credit Framework as per the NEP for 4-year UG Degree with Honours and Honours with Research

To be implemented from Academic Year 2023-24

Semester – 1

Sem	Course code	Course Category	Paper Title	Theory/ Practical	Credit
I	BFSNMJT01	Major Course	Fundamentals of Food Science & Nutrition	Theory	3
	BFSNMJP01		Fundamentals of Food Science & Nutrition	Practical	1
	BFSNMJT02		Applied Science I	Theory	3
	BFSNMJP02		Applied Science I	Practical	1
	BFSNMCT01	Minor Course	Foundation of Art & Design	Theory	2
	BFSNMCP01		Foundation of Art & Design	Practical	2
	BFSNMDCT01	Multi-disciplinary Course	Logical & Mathematical Reasoning	Theory	2
	BFSNMDCP01		Logical & Mathematical Reasoning	Practical	2
	BFSNAECT01	Ability Enhancement Course	English Proficiency and Life Skills (English)	Theory	2
	BFSNSECT01	Skill Enhancement	Nutrition & Fitness	Theory	1
	BFSNSECP01		Nutrition & Fitness	Practical	1
	BFSNVACT01	Value Added Course	Bharatiya Knowledge System	Theory	2
			NCC/NSS/Physical Training/Saptadhara		
	TOTAL CREDIT				**22**

Semester – 2

Sem	Course code	Course Category	Paper Title	Theory/ Practical	Credit
II	BFSNMJT03	Major Course	Nutrition During Lifespan	Theory	3
	BFSNMJP03		Nutrition During Lifespan	Practical	1
	BFSNMJT04		Applied Science II	Theory	3
	BFSNMJP04		Applied Science II	Practical	1
	BFSNMCT02	Minor Course	Introduction to Clothing & Textiles	Theory	2
	BFSNMCP02		Introduction to Clothing & Textiles	Practical	2
	BFSNMDCT02	Multi Disciplinary Course	Vedic Nutrition	Theory	2
	BFSNMDCP02		Vedic Nutrition	Practical	2
	BFSNAECT02	Ability Enhancement Course	English Proficiency and Life Skills (English)	Theory	2
	BFSNSECP02	Skill Enhancement	Computer Application in Nutrition	Practical	2
	BFSNVACT02	Value Added Course	Bharatiya Knowledge System	Theory	2
			NCC/NSS/Physical Training/Saptadhara		
	TOTAL CREDIT				**22**
Exit option with Certificate in Food Science & Nutrition (44 Credits)					
Exit option with Certificate in Food Science & Nutrition With Internship- 4 Credits (48 Credits)					

F.Y. B. Sc.

Food Science & Nutrition

Semester I

To be implemented from

Academic Year 2023-24

Subject Code [2303030301010011]

F. Y. B.Sc. (Food science & Nutrition)
Semester – I
Fundamentals of Food Science and Nutrition (Theory)

Course	Paper No.	Hours/week	Credit
Fundamentals of Food Science and Nutrition (Major)	BFSNMJT01	3	3

Objectives:

1. To provide students with the knowledge of basic terminology and several aspects of nutrition and the functions of food in healthy life sustenance
2. To ensure that students are familiar with the food classification, functions of various nutrients, their requirements, dietary sources and effect of deficiencies and excess.
3. To be familiar with different cooking methods, their advantages and disadvantages
4. To learn how to improve food's nutritional quality.

Chapter no.	Topic and Details	Number of lectures assigned
1	**Basic concepts of Foods and Nutrition:** • Terms used in Nutrition and Health: Food, Health, Nutrition, Nutrients, Balanced diet, R.D.A., etc. • Classification and Functions of Food, Food groups and Food guide pyramids • Methods of cooking, advantages and disadvantages of cooking methods and effect of cooking on nutritive value • Basic methods to improve the nutritional quality of foods: • Germination, Fermentation, Supplementation, Fortification and enrichment	6
2	**Macronutrient:** Carbohydrates: Composition and classification Monosaccharides - glucose, fructose, galactose. Disaccharides - Maltose, lactose, sucrose Polysaccharides - Dextrin, starch, glycogen Sources, daily requirements, functions. Effects of too high and too low carbohydrates on health, digestion and absorption of carbohydrate. Lipids: • Classification & Properties. Fatty acids-composition, properties • sources, daily requirements, functions, digestion & absorption lipids • Role & nutritional significances of PUFA, MUFA, SFA, • Omega-3 fatty acid. Proteins: • Composition, Classification, • Amino acids -Classification, types, functions. • Proteins - Sources, daily requirements, functions, Effect of too high - too low proteins on health. Digestion	10

3	**Micronutrients – I** Classification Fat-soluble vitamins: Vitamin A, D, E and K • sources, daily requirements, functions, digestion & absorption • Deficiencies and effect of excess amount on health Water-soluble vitamins: Vitamin – B complex and Ascorbic acid • sources, daily requirements, functions, digestion & absorption • Deficiencies and effect of excess amount on health	12
4	**Micronutrients – II** Classification Macro minerals: Calcium, Phosphorus, Magnesium, Sodium, Potassium, etc. • sources, daily requirements, functions, digestion & absorption • Deficiencies Micro minerals: Iron, Zinc, Iodine, Fluoride, etc. • sources, daily requirements, functions, digestion & absorption • Deficiencies	8
5	**Water:** Functions, daily requirements, Water balance **Dietary Fiber**: Classification, sources, composition and nutritional significance.	4

References:

1. Mahana R. ; Puri S.; Khanna S. ; Gupta S. ;Jain S.; Seth R.(2020)Textbook of Nutrition and Dietetics, Elite Punlishing House
2. Mudambi, R. S.;Rajgopal M.V.(2020) Fundamentals of Foods and Nutrition, New age International Pvt. Ltd.
3. Singh J.(2017) Handbook of Nutrition And Dietetics, Lotus press, New Delhi

Subject Code [2303030301010012]

F. Y. B.Sc. - Food science and Nutrition
Semester – I

Fundamentals of Food Science and Nutrition (Practical)

Course	Paper No.	Hours/ week	Credit
Fundamentals of Food Science and Nutrition (Major)	BFSNMJP01	2	1

Objectives:

1. To learn measuring different types of foods – grains, flours, raw vegetables, fruits & liquids
2. To provide students with the knowledge of serving size, exchange sizes and cooked amount of different recipes
3. To learn the uses of food guide
4. To standardize different recipes based on portion size
5. To learn the various cooking methods and mediums of cooking.
6. To make a list of rich sources of various nutrients, plan and prepare recipes.

Chapter no.	Topic and Details	Number of lectures assigned
1	**Basics of Food Preparation :** • Food groups- Introduction to food guide, grouping of foods, discussion on nutritive value, calculation of nutrient present in different food groups. • Measuring ingredients –Introduction of common measuring tools use in the preparation of different recipes, Methods of measuring different types of foods like grains, flours, Raw fruits and vegetables, liquids, etc. • Edible portion- Determination of edible portion percentage of different foods. • Standardization of basic recipes and Portion size.	14
2	**Plan and Prepare Recipes for:** • Different cooking methods • Carbohydrate: High And Low • Energy : High And Low • Protein: High animal protein and High plant protein • Vitamin- A and carotene • B-complex vitamins • Vitamin – C • Minerals – High Calcium and High Iron	14

References:

1. Gopalan C., Sastri V. R., Balasubramanium S.C.; (2018); Nutritive value of Indian Foods; ICMR & NIN, Hyderabad
2. Longvah T., Ananthan R., Bhaskarachary K., Venkalah K.; (2017) Indian food composition tables; N I N, Hyderabad.
3. Some common Indian Recipes and their Nutritive value; N I N, Hyderabad

Subject Code [2303030301020021]

F.Y. B. Sc. (Food Science & Nutrition)

Semester-1

Applied Science-I (Theory)

Course	Paper No	Hours/Week	Credit
Applied Science-I (Major)	BFSNMJT02	3	3

Objectives:

1. To know the importance and application of science in daily life
2. To develop scientific approach and analytical attitude.
3. To acquire basic knowledge of various chemical processes.
4. To understand the application of chemistry in food, textile, medicine, agriculture and other industries.

Chapter No.	Topics & Details	No. of lectures assigned
1.	**Revision of Basic Chemistry** • Important definitions e.g. Element, compound, mole, atom, mole concept, periodic table and its use, Molecular wt., Atomic wt., Crystalloids, colloids, Solution, difference between true solution and colloidal solution, normality ,molarity, methods of expressing the strength/concentration of solution. • Calculation and conversion of strength of solution. • Difference between Organic & Inorganic compounds with suitable examples. • Functional groups of organic compounds and its examples.	5
2.	**Soap and detergents** • Introduction and historical background. • Definition of Soap and Detergent. • Saponification process • Difference between Soap and Detergent • Advantages and disadvantages of soap and detergents. • Raw material for soap making and its role. • Cleansing action of soap and detergents	4
3	**Agrochemicals** **(Insecticides and Pesticides)** • Introduction and importance • Types of agrochemicals and according to PFA their max. permissible limit to use. • Pesticides in our food. • Health hazards/toxicity of Agrochemicals with suitable examples.	3

4	**Drugs and Pharmaceuticals** • Introduction to drugs and its meaning. • Uses of drugs and causes of disease. • Definition and classification based on chemical structure, name and therapeutic action. • Qualities or properties of an ideal drug/good drug. • Common therapeutic drugs-meaning with suitable examples. • Mode of action of Antibiotics (in brief). • Uses and side effects of Aspirin, antibiotics, paracetamol, sulphanilamide etc.	6
5	**Dyes** • Introduction and historical background • Definition of dyes (chromophore, auxochrome). • Classification of dyes based on chemical constitution and mode of application with suitable examples. • Uses of different dyes in food, textile, medicine, laboratory etc. • Health hazards of dyes.	5
6	**Introduction to polymers and their application** • Definition and types of polymerization-Addition polymerization and condensation polymerization • Classification of polymers with suitable examples: 1) Natural and synthetic 2) Organic and inorganic 3) Thermoplastic and Thermosetting • Some important polymers and their properties & uses polyethylene, polyester, Nylon, Teflon, polyvinyl chloride(PVC)	5

References:

- K. Venkatraman (1952): The Chemistry of Synthetic Dyes, Vol. I, Academic Press, New York.
- Kent S.A. (1974): Riegel's Handbook of Industrial Chemistry.
- Person D. (1983): The Chemical Analysis of Food, Churchill Livings Tone, Edinburgh, London, New York.
- Textbook of std.11 and 12 (Chemistry)
- Textbook of Industrial chemistry by Sharm

Subject Code [2303030301020022]

F.Y. B. Sc. (Food Science & Nutrition)

Semester-1

Applied Science-I (Practical)

Course	Paper No	Hours/Week	Credit
Applied Science-I (Major)	BFSNMJP02	2	1

Objectives:

1. Know the importance and application of science in daily life
2. Develop scientific approach and analytical attitude.
3. Acquire basic knowledge of various chemical processes.
4. Understand the application of chemistry in food, textile, medicine, agriculture and other industries.

Practical No.	Topics & Details	No. of lectures assigned
1.	Introduction to laboratory apparatus	2
2	Acid – Base Titration - Strong acid – Weak base	4
3	Acid – Base Titration - Weak acid – Strong base	2
4	Acid – Base Titration - Strong acid – Strong base	2
5	Redox reaction – $KMnO_4$ vs $H_2C_2O_4$ $2H_2O$	4
6	Soap Making	2
7	pH determination using pH papers	2

References:

- K. Venkatraman (1952): The Chemistry of Synthetic Dyes, Vol. I, Academic Press, New York.
- Kent S.A. (1974): Riegel's Handbook of Industrial Chemistry.
- Person D. (1983): The Chemical Analysis of Food, Churchill Livings Tone, Edinburgh, London, New York.
- Textbook of std.11 and 12 (Chemistry Practical Book)
- Textbook of Industrial chemistry by Sharma
- Prayogik Rashayan Shashtra – B. K. Bhatt

Subject Code [2303030301030001]

F.Y. B. Sc. (Food Science & Nutrition)
Semester I

Foundation of Art and Design (Theory)

Course	Paper No	Hours/Week	Credit
Foundation of Art and Design (Minor)	BFSNMCT01	2	2

Objective:

1. To understand elements and principles of art and design.
2. To develop aesthetic sense and be a good art consumer.
3. To develop an understanding of the application of art principles in design composition of traditional and contemporary art, and interior design.
4. To develop skill in using colours to create different effect in space.

Chapter No.	Topics and Details	No. of lectures assigned
1	**Introduction to design** • Classification and purpose of design • Types of design • Design process	6
2	**Principles of design** • Balance • Harmony • Proportion • Rhythm • Emphasis	6
3	**Elements of Design** • Line • Shape and Form • Space • Texture • Light • Colour	6
4	**Study of colour** • Classification of colours (Primary, Secondary, Tertiary) • Dimension of colour (Hue, Value, Intensity) • Colour scheme (Monochromatic scheme, Complementary scheme, Analogous scheme, Split complementary scheme, Double split complementary, Triads)	4
5	**Introduction to Residential Space Planning and furnishing** • Factors influencing selection of house • Factors of house planning • Lighting in house • History of furniture	

References:

- Bhatt Pranav and Goenka Shanita (1990): The Foundation of Art and Design, Bombay: Lakhani book Depot.
- Birrel, Verla Leone (1967) Colour and Design: A Basic Text (Vol-I & II) Digest Submitted in requirement for the degree of education in Teacher college Columbia University.

- Botter and Lockart (1961) Design for you, New York: John Willey & Sons Inc.
- Duncan, Miller (1949), Interior Decoration, London, New York, The Publications.

Subject Code [2303030301030002]
F.Y. B. Sc. (Food Science & Nutrition)
Semester I

Foundation of Art and Design (Practical)

Course	Paper No	Hours/Week	Credit
Foundation of Art and Design (Minor)	BFSNMCP01	4	2

Objectives:

1. To develop skill in using colour scheme to create any art.
2. To understand elements and principal of design
3. To develop an understanding of light and colour in design.
4. To Gain knowledge on different styles of motif.

Practical No.	Topics and Details	No. of lectures assigned
1	Drawing of colour wheel with primary, secondary, territory colours	2
2	Drawing of colour scheme	4
3	Value scale: Black-while, primary colour, secondary colour and Intermediate colour	2
4	Drawing of colour spectrum	2
5	Preparation of motifs • Naturalistic- Scenic, floral, birds & animal • Stylized/conventional • Geometric • Abstract	4
6	Designing motifs based on principal of design • Balance • Rhythm • Proportion • Emphasis • Harmony	6
7	Texture and collage making	2
8	Enlargement and reduction of design	4

References:

- Bhatt Pranav and Goenka Shanita (1990): The Foundation of Art and Design, Bombay: Lakhani book Depot.
- Birrel, Verla Leone (1967) Colour and Design: A Basic Text (Vol-I & II) Digest Submitted in requirement for the degree of education in Teacher college Columbia University.
- Botter and Lockart (1961) Design for you, New York: John Willey & Sons Inc.
- Duncan, Miller (1949), Interior Decoration, London, New York, The Publications.
- Kasu, A. (2012). Interior Design, VthEdition, Ashish Book Center, Chamber D. N. Road, Mumbai.
- Seetharaman, P., &Pannu P. (2010): Interior Design and Decoration, CBS Publishers

Subject Code [2303030301044001]

F.Y. B. Sc. (Food Science & Nutrition)

Semester I

Logical and Mathematical Reasoning (Theory)

Course	Paper No	Hours/ Week	Credit
Logical and Mathematical Reasoning (MDC)	BFSNMDCT01	2	2

Objectives:

- To employ critical thinking in identifying the problem, developing analytical skills and capabilities to resolve the problems efficiently

Chapter No.	Topics & Details	No. of lectures assigned
1	Types of reasoning. Number series, Letter series, Codes and Relationships. Mathematical Aptitude (Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages etc.).	12
2	Logical Reasoning Syllabus Understanding the structure of arguments: argument forms, the structure of categorical propositions, Mood and Figure, Formal and Informal fallacies, Uses of language, Connotations and denotations of terms, Classical square of opposition. Evaluating and distinguishing deductive and inductive reasoning. Analogies. Venn diagram: Simple and multiple uses for establishing the validity of arguments. Indian Logic: Means of knowledge. Pramanas: Pratyaksha (Perception), Anumana (Inference), Upamana (Comparison), Shabda (Verbal testimony), Arthapatti (Implication) and Anupalabddhi (Non-apprehension). Structure and kinds of Anumana (inference), Vyapti (invariable relation), Hetvabhasas (fallacies of inference).	16

Subject Code [2303030301044002]

F.Y. B. Sc. (Food Science & Nutrition)

Semester I

Logical and Mathematical Reasoning (Practical)

Course	Paper No	Hours/ Week	Credit
Logical and Mathematical Reasoning (MDC)	BFSNMDCP01	4	2

Objectives:

- To employ critical thinking in identifying the problem, developing analytical skills and capabilities to resolve the problems efficiently

Chapter No.	Topics & Details	No. of lectures assigned
1	Types of reasoning. Number series, Letter series, Codes and Relationships. Mathematical Aptitude (Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages etc.).	12
2	Logical Reasoning Syllabus Understanding the structure of arguments: argument forms, the structure of categorical propositions, Mood and Figure, Formal and Informal fallacies, Uses of language, Connotations and denotations of terms, Classical square of opposition. Evaluating and distinguishing deductive and inductive reasoning. Analogies. Venn diagram: Simple and multiple uses for establishing the validity of arguments. Indian Logic: Means of knowledge. Pramanas: Pratyaksha (Perception), Anumana (Inference), Upamana (Comparison), Shabda (Verbal testimony), Arthapatti (Implication) and Anupalabddhi (Non-apprehension). Structure and kinds of Anumana (inference), Vyapti (invariable relation), Hetvabhasas (fallacies of inference).	16

Subject Code [2303030301060001]

F.Y. B. Sc. (Food Science & Nutrition)
1st Semester

Nutrition and Fitness (Theory)

Course	Paper no.	Hours per week	Credit
Nutrition and Fitness (SEC)	BFSNSECT01	1	1

Objectives:

1. To understand various aspects of health and fitness.
2. To adopt a holistic approach towards health management and disease prevention.
3. To develop the ability to provide guidance on healthy diet, exercise & lifestyle modifications for disease prevention and management.

Chapter No.	Topic and Details	No. of lectures assigned
1	Introduction to health and fitness 1. Elements of fitness 2. Evaluation of fitness 3. Analysis of Body composition 4. Exercise methods and prevention of exercise injuries 5. Stress management	10
2	Lifestyle Modification Introduction, prevention and control of lifestyle disorders 1. Diabetes 2. CVD, HTN 3. Metabolic syndrome 4. PCOS and Reproductive health	08
3	1. FAD diets 2. Nutritional Supplements 3. Meal Replacers 4. Appetite Suppressants	05

References:

- Elenaor N., Whitney S., Rady R. (1993): Understanding Nutrition, West Publishing Company, Minneapolis.
- Wardlaw (1993): Perspectives in Nutrition, Paul Insel Mosby.
- Robinsson and Lawler (1986): Normal and Therapeutic Nutrition, Mac Millan Pub. Co.
- McArdle, William D (2010): Exercise Physiology, Lippincott, William and Wilkins, Philadelphia.
- Sharkley, Brian J and Gaskill, Steven E. (2007): Fitness and Health, 6th Edition, Human Kinetics, USA.

Subject Code [2303030301060002]

F.Y. B. Sc. (Food Science & Nutrition)
1st Semester

Nutrition and Fitness (Practical)

Course	Paper no.	Hours per week	Credit
Nutrition and Fitness (SEC)	BFSNSECP01	1	1

Objectives:

4. To understand various aspects of health and fitness.
5. To adopt a holistic approach towards health management and disease prevention.
6. To develop the ability to provide guidance on healthy diet, exercise & lifestyle modifications for disease prevention and management.

Chapter No.	Topic and Details	No. of lectures assigned
1	Introduction to health and fitness a) Elements of fitness b) Evaluation of fitness c) Analysis of Body composition d) Exercise methods and prevention of exercise injuries e) Stress management	08
2	Surya Namaskar Yoga & Pranayam Aerobic Exercise Meditation	10
3	FAD diets Nutritional Supplements Meal Replacers Appetite Suppressants	05

References:

- Elenaor N., Whitney S., Rady R. (1993): Understanding Nutrition, West Publishing Company, Minneapolis.
- Wardlaw (1993): Perspectives in Nutrition, Paul Insel Mosby.
- Robinsson and Lawler (1986): Normal and Therapeutic Nutrition, Mac Millan Pub. Co.
- McArdle, William D (2010): Exercise Physiology, Lippincott, William and Wilkins, Philadelphia.
- Sharkley, Brian J and Gaskill, Steven E. (2007): Fitness and Health, 6th Edition, Human Kinetics, USA.

F.Y. B. Sc.

Food Science & Nutrition

Semester II

To be implemented from

Academic Year 2023-24

Subject Code [2403030302010011]

F.Y. B.Sc. (Food Science & Nutrition)

Semester II

Nutrition During Lifespan (Theory)

Course	Paper no.	Hours/ week	Credit
Nutrition During Lifespan (Theory) (Major)	BFSNMJT03	3	3

Objectives:

- Study the growth and development during various stages of life span
- Understand the basics for recommending the dietary allowances
- Study nutritional needs at different stages of life span

Chapter No.	Topic and Details	No. of lectures assigned
1	**Basics of meal planning:** • Basic concept and purposes of Recommending the Dietary Allowances, Factors Affecting Recommended Dietary Allowances • Uses of ICMR- RDA in planning balance diet • Exchange system and Dietary Diversity	6
2	**Nutrition in Pregnancy and Lactation:** • Physiological Changes occurring during Pregnancy • Importance of Food and Nutritional Care and Requirement during pregnancy • General Dietary and nutritional Problems and Complications • Physiology and Hormones involved in Lactation • Food supplements and galactagogues. • Factors Affecting the Volume and Composition of Breast Milk, • Nutritional Requirements during lactation	8
3	**Nutrition in Infancy:** • Growth and Development of Infants • Composition of Human Milk and Human Milk Substitute • Bottle Feeding and related Problems • Weaning and Supplementary Feeding Foods • Feeding Problems and Complications. • Use of growth charts and standards and prevention of growth faltering	6
4	**Nutrition in childhood and adolescence:** • Growth and Development of Pre School • School Going Children and Adolescence. • Food and Nutritional Requirements • Factors to be considered while Planning Diet for Children and Adolescents • Growth Spurt during Adolescence.	6

	• Food Habits, Dietary Guidelines, Food and Nutritional Requirements • Nutritional and Behavioral Problems and Eating Disorders	
5	**Nutrition in adulthood and old age:** • Reference Man and Reference Woman, • Food and Nutritional Requirements for Adults doing Different Activities • Processes of Ageing • Food and Nutritional Requirements of Elders • Nutrition Related Problems of Old Age • Dietary Guidelines and diet Modifications	4

Subject Code [2403030302010012]

F.Y. B.Sc. (Food Science & Nutrition)
Semester II

Nutrition During Lifespan (Practical)

Course	Paper no.	Hours/ week	Credit
Nutrition During Lifespan (Practical) (Major)	BFSNMJP03	2	1

Objectives:

1. Study the growth and development during various stages of life span
2. Understand the basics for recommending the dietary allowances
3. Design food plans and assess the adequacy of diets to meet the nutritional needs of humans at various stages of life cycle.
4. Gain experience in planning adequate diets for different age groups and for different income groups.

Practical No.	Topics and Details	No. of lectures assigned
1	Planning, Preparing and Evaluating Menu for Infants (Supplementary Foods)	4
2	Planning, Preparing and Evaluating Menu for Pre-schoolers	2
3	Planning, Preparing and Evaluating Menu for School Going Children	2
4	Planning, Preparing and Evaluating Menu for Adolescents	4
5	Planning, Preparing and Evaluating Menu for Adults	4
6	Planning, Preparing and Evaluating Menu for Elderly	4

References:

- Mahtab, S, Bamji, Kamala Krishnasamy, Brahmam, G.N.V. (2012)Text Book of Human Nutrition, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.
- Srilakshmi, B. (2013), Dietetics, New Age International (P) Ltd., New Delhi.
- SunetraRoday (2017). Food Science and Nutrition, Oxford University Press, New Delhi.
- Longvah, T, Ananthan, R, Bhaskarachary, K, Venkaiah, K. (2017). Indian Food Composition Tables (IFCT), Indian Council of Medical Research, National Institute of Nutrition, Hyderabad.
- Shakuntala Manay, Shadaksharaswamy. M (2013) Foods, Facts and Principles, New Age International Pvt Ltd Publishers, 2nd Edition) Ltd., New Delhi.
- Swaminathan, M. (2012), Advanced Textbook on Food and Nutrition, Vol. 1, Second Edition, Bangalore Printing and Publishing Co. Ltd., Bangalore.

Subject Code [2403030302020021]

F.Y. B.Sc. (Food Science & Nutrition)

Semester II

Applied Science- II (Theory)

Course	Paper no.	Hours/ week	Credit
Applied Science- II (Major)	BFSNMJT04	3	3

Objectives:

1. To apply the basic knowledge of biology in daily life.
2. To develop an understanding about how cells work.
3. To create an understanding about various diseases and general health care.

Chapter No.	Topic and Details	No. of lectures assigned
1	**Cell** • Introduction to cell • Types of cells and their characteristics (prokaryotes vs eukaryotes) • Structures and functions of important organelles of typical animal cell • Cell division- Mitosis and Meiosis (brief introduction)	6
2	**Introduction to Microorganisms** • Bacteria ➢ Structure and Morphology ➢ Classification based on response to O2, temperature and nutritional requirements ➢ Economic importance • Fungi ➢ Morphology, general classification and Physiological characteristics of moulds and yeasts ➢ Industrial importance of fungi and yeast • Viruses ➢ Morphology and classification ➢ Importance	6
3	**Chemical basis of heredity** • Sex determination • Autosomal, recessive and sex-linked inheritance • Mutation- types, abnormalities in chromosomes number	6

4	**General Health care and common diseases in human beings** • Introduction to health and diseases • Types of diseases (infectious and non-infectious-in brief) • Common diseases in human beings (in brief) ➢ Typhoid ➢ Pneumonia ➢ Common cold ➢ Malaria ➢ Ascariasis ➢ Amoebiasis	6
5	**Genetic Engineering and Biotechnology** • Definition of terms • Gene cloning • Applications of genetic engineering • Insects and virus resistant plants • Plants with improved characteristics • Production of growth hormone, Insulin	4

References:

- Dutta A.C.,(1980) ' A class book of Botany' John Brown, oxford university press. Faraday House, Calcutta- 13.
- Apsangikar D.K. and Rane K.T.(1975): 'Introduction to Botany': Popular Publication Surat.
- Sharma V.K. (1990) 'Biology class XI'Publishers 23,Daryaganj New Delhi-110002.
- Sankaram M.S.(1990) 'Biology for Class XII'Tata McGraw-Hill Publishing Company Limited 4/12 Asaf Ali Road New Delhi.
- Gujarat State Board of school Text books (1994) 'Biology Standard 12': old assembly Building Sector 17,Gandhinagar.
- Gujarat State Board of school Text books (1996) 'Biology Standard 12': old assembly Building Sector 17,Gandhinagar.
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Subject Code [2403030302020022]

F.Y. B.Sc. (Food Science & Nutrition)
Semester II

Applied Science- II (Practical)

Course	Paper no.	Hours/ week	Credit
Applied Science- II (Major)	BFSNMJP04	2	1

Objectives:

1. To enable students to develop the skill and ability to work systematically in biology laboratory.
2. Acquire knowledge of various microorganisms and required skills to study them.
3. Apply the knowledge in everyday life.

Practical No.	Topic and Details	No. of lectures assigned
1	Study and care of simple microscope & compound microscope	4
2	Monochrome staining (Curd bacteria)	4
3	Monochrome staining (Pure culture of bacteria)	2
4	Identification of tissues	2
5	Study of common fungi and other pathogens	4
6	Study of medicinally important plants (project)	2

References:

- Dutta A.C.,(1980) ' A class book of Botany' John Brown, oxford university press. Faraday House, Calcutta- 13.
- Apsangikar D.K. and Rane K.T.(1975): 'Introduction to Botany': Popular Publication Surat.
- Sharma V.K. (1990) 'Biology class XI'Publishers 23,Daryaganj New Delhi-110002.
- Sankaram M.S.(1990) 'Biology for Class XII'Tata McGraw-Hill Publishing Company Limited 4/12 Asaf Ali Road New Delhi.
- Gujarat State Board of school Text books (1994) 'Biology Standard 12': old assembly Building Sector 17,Gandhinagar.
- Gujarat State Board of school Text books (1996) 'Biology Standard 12': old assembly Building Sector 17,Gandhinagar.
- Maheshwari P.Manoharlal (1996) 'Biology Part 1-7' NCERT New Delhi

Subject Code [2403030302030001]

F.Y. B. Sc. (Food Science & Nutrition)
Semester II
Introduction to Clothing and Textiles (Theory)

Course	Paper No	Hours/ Week	Credit
Introduction to Clothing and Textiles (Minor)	BFSNMCT02	2	2

Objectives:

1. To obtain a broad understanding of textiles and clothing
2. To develop understanding of technical terms involved in textiles.
3. To understand different types of yarns, weaves and finishes.
4. To create awareness and arouse interest in selecting clothes to suit one's personality

Chapter No.	Topics and Details	No. of lectures assigned
1	**Introduction to textiles** • Classification of textile fibers (Natural, Man made) • Properties of fiber • Types of weaves (Basic weave- Plain weave, Rib weave, Basket weave, Twill weave, Satin weave. Compound weave- Dobby weave, jacquard weave, Extra yarn weave, pique, Double cloth)	8
2	**Introduction to Yarn** • Types of yarn (staple yarns, filament yarn) • Factors affecting yarn (Yarn twist, Direction of twist, Yarn count) • Yarn classification (On the basis of number of parts or structure, On the basis of fibre length)	5
3	**Introduction to clothing** • Theories of clothing (Modesty theory, Immodesty theory, Protection theory, Adornment theory) • Functions of clothing • Factors influencing clothing preference (Physiological, psychological, environmental)	7
4	**Types of figures** (Hourglass, Top Hourglass, Bottom hour glass, Spoon, Triangle, Inverted Triangle, Rectangle) **Care labels and symbol**	4

References:

- Bhatia R. and Arora C., Introduction to Clothing and Textiles, The Maharaja Sayajirao University of Baroda, Vadodara 1999.
- Booth, J.E. (1996). Principles of Textile Testing. New Delhi: CBS Publishers & Distributors Pvt. Ltd.
- Corbman, P.B. (1983). Textiles: Fibre to Fabric. McGraw-Hill Publishers.
- Collier, B.J., & Epps, H.H. (1998). Textile testing and analysis. Prentice Hall Publishers.
- Dantyagi, S. (1996). Fundamentals of Textiles and their Care. India: Orient Black swan Private Limited.
- Madhulika, P. (2013). Weaving. New Delhi: Random Publishing.

Subject Code [2403030302030002]

F.Y. B. Sc. (General Home Science)
Semester II

Introduction to Clothing and Textiles (Practical)

Course	Paper No	Hours/ Week	Credit
Introduction to Clothing and Textiles (Minor)	BFSNMCP02	4	2

Objectives:

1. To develop skill in operating sewing machine
2. To gain an understanding about different construction techniques and its use.
3. To develop skill in hand sewing

Practical No.	Topics and Details	No. of lectures assigned
1	Introduction to type of sewing machines, its part.	2
2	Body measurement	2
3	Identification and importance of fabric grain line	2
4	**Hand sewing technique-** Hand basting, Hemming, Back stitch	6
5	**Basic seam-** Plain seam, French seam, top stitched, flat and fell seam	6
6	**Gathers and pleats**	4

References:

- Anna Jacob Thomas, The art of sewing, UBS publishers' distributers, 1995
- Readers digest, Complete guide to sewing, Trusted media brands, USA

Subject Code [2403030302040001]

F.Y. B. Sc. (Food Science & Nutrition)
Semester II

Vedic Nutrition (Theory)

Course	Paper No.	Hours/ week	Credit
Vedic Nutrition (MDC)	BFSNMDCT02	2	2

Objectives:

- To introduce the basic principles of nutrition in Ayurveda
- To link the Ayurvedic nutrition with modern dietary practices for health
- To analyse basic tenets of traditional diets and healthy recipes
- To understand the contemporary food habits in everyday life

Chapter No.	Topic and Details	No. of lectures assigned
1	UNIT -I Introduction to Ayurvedic Nutrition • Ayurveda and Indian food cultures • Nutrition and lifestyle transition over the years • Regional Food Traditions of India	08
2	UNIT -II Basic principles of Food and Nutrition and Ayurveda • Understanding rich sources of nutrients • Concept of Doshas & assessment • Ayurvedic Principles of food habits and factors determining quality of food (Ahara vidhi visheshaayatana) • FSSAl regulations on Ayurvedic Aahar	15
3	UNIT- III Ayurvedic Diets • Principles of Diet: Aharavidhi vidhan, Sattvic, Rajasi, Tamasic foods • Incompatible food (Viruddha Ahara), Pathya; Apathya; Viprita Ahaar • Lifestyle Management with Dincharya and Ritucharya • Application of Ayurvedic diets to stress linked food behaviour	15

Subject Code [2403030302040002]

F.Y. B. Sc. (Food Science & Nutrition)
Semester II

Vedic Nutrition (Practical)

Course	Paper No.	Hours/ week	Credit
Vedic Nutrition (MDC)	BFSNMDCP02	4	2

Objectives:

- To introduce the basic principles of nutrition in Ayurveda
- To link the Ayurvedic nutrition with modern dietary practices for health
- To analyse basic tenets of traditional diets and healthy recipes
- To understand the contemporary food habits in everyday life

Chapter No.	Topic and Details	No. of lectures assigned
1	Visit your local market and classify the available food items according to Sattvic, Rajasi, Tamasic foods	5
2	Conduct a survey of 10-15 households in your locality: 1) to study food behaviour and analyse them in light of Ayurvedic dietary principles of Sattvic, Rajasi, Tamasic 2) to study the food consumption patterns and intake of incompatible food: Viruddha Ahara, Pathya; Apathya; Viprita Ahaar 3) to know about their adopted lifestyle Dincharya and Ritucharya	8
3	Visit available e-resources of University of Delhi, Ministry of Ayush with regard to Ayurveda and Nutrition.	4
4	Preparation of a meal according to the Indian Regional Ayurvedic Foods	4
5	Preparation of seasonal meals according to the nature of food.	4

Subject Code [2403030302060001]

F.Y. B. Sc. (Food Science & Nutrition)
Semester II

Computer Application in Nutrition (Practical)

Course	Paper No.	Hours/ week	Credit
Computer Application in Nutrition (SEC)	BFSNSECP02	4	2

Objectives:

These applications allow the management of relevant information, facilitating and speeding up the diet treatment, and are designed for a general population with potential nutritional problems.

Chapter No.	Topic and Details	No. of lectures assigned
1	Use of word processing software for creating reports and presentation.	5
2	Use of Google Docs, Sheets, Slides and Forms	8
3	Use of internet data base and software tools for literature review and bibliography	6
4	Statistical analysis using MS-Excel and other statistical software for – 1. Applications in food quality data analysis 2. Applications in nutritional epidemiology and clinical study data analysis 3. Representation	8