SNDT Women's University, Mumbai

Bachelor of Science
(Home Science- Food Science & Quality Control)

B.Sc. (H. Sc. FSQC)

As Per NEP - 2020

Syllabus

(2024-2025)

Credit structure For Under Graduate Programmes in Humanities, Science and Technology and Interdisciplinary Studies Faculties
(2024 May as per GR dated 13/03/2024)

	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Total
Subject No 1 (to be treated as Major)	4		12	12	8	10	**46**
Subject No 2 (A and B), so minor	2	2	2		4	4	**14**
Subject No 3		4					**4**
VSC S1	2				2		**4**
VSC S2		2					**2**
VSC S3		2					**2**
Major (Elective)					4	4	**8**
OEC	4	4	2	2			**12**
SEC	2	2		2			**6**
AEC (English)	2	2	2	2			**8**
AEC (Modern Indian Language)			2	2			**4**
VEC	2	2					**4**
CC	2	2	2	2			**8**
IKS (Generic)	2						**2**
IKS (Major-Specific)					2		**2**
FP					2		**2**
OJT						4	**4**
	22	**22**	**22**	**22**	**22**	**22**	**132**

Terminologies

Abbreviation	Full-form	Remarks	Related to Major and Minor Courses
Major (Core)	Main Discipline		
Major (Elective)	Elective Options		related to the Major Discipline
Minor Stream	Other Disciplines (Inter/ Multidisciplinary) not related to the Major	either from the same Faculty or any other faculty	
OEC	Open Elective Courses/ Generic		Not Related to the Major and Minor
VSC	Vocational Skill Courses		Related to the Major and Minor
SEC	Skill Enhancement Courses		Not Related to the Major and Minor
AEC	Ability Enhancement Courses	Communication skills, critical reading, academic writing, etc.	Not Related to the Major and Minor
VEC	Value Education Courses	Understanding India, Environmental science/education, Digital and technological solutions, Health & Wellness, Yoga education, sports, and fitness	Not Related to the Major and Minor
IKS	Indian Knowledge System	I. Generic IKS Course: basic knowledge of the IKS II. II. Subject-Specific IKS Courses: advanced information about the subject: part of the major credit	Subject Specific IKS related to Major
OJT	On-Job Training (Internship/Apprenticeship)	corresponding to the Major Subject	Related to the Major
FP	Field projects	corresponding to the Major Subject	Related to the Major
CC	Co-curricular Courses	Health and Wellness, Yoga education sports, and fitness, Cultural Activities, NSS/NCC and Fine/ Applied/Visual/ Performing Arts	Not Related to the Major and Minor
CE	Community Engagement and service		Not Related to the Major and Minor
RP	Research Project	corresponding to the Major Subject	Related to the Major

Programme Template

Programme Degree		B.Sc.
Specialization Major		Food Science & Nutrition
Faculty		Science & Technology
Specialization		Food Science & Quality Control
Preamble		The Program lays a strong emphasis on an integrated approach through Multidisciplinary subjects that will enable students to build a variety of skills and a broad base of professional knowledge related to food science and quality control. It encourages the development of scientific perspectives and a research attitude in students related to food science and nutrition. The programme focuses on quality control aspects of food science and nutrition and trains learners in human physiology, biochemistry, nutrition, food microbiology, food preservation, Post-Harvest Technology, Food Processing, Food Equipments, Labeling, Food Toxicology and their relationships. At the end of the programme, the learners can work in the areas of food product development and food quality control.
Programme Specific Outcomes (PSOs)		After completing this programme, Learner will -
	1.	Examine the composition of various foods and the changes taking place during their processing and Cooking.
	2.	Analyze food and nutrition science.
	3.	Comprehend the fundamentals of human physiology, biochemistry, nutrition, food microbiology, food preservation, Post-Harvest Technology, Food Processing, Food Equipments, Labeling, Food Toxicology and their relationships.
	4.	Acquire knowledge and confidence to work in the area of food quality control and food product development.
	5.	Undertake research in and about Food analysis.
Eligibility Criteria for Programme		Any woman who has successfully cleared 10+2 in Home Science/Science subject from the recognized Boards by the Government of India/respective state or have required credits as per the government norms to be able to join undergraduate programme. Student having studied Chemistry at 10+2 will be given preference.
Intake for affiliated Colleges		60 (Batch size for Practical 15)

Structure with Course Titles

B.Sc. (H. Sc. FSQC)

SN	Courses	Type of Course	Credits	Marks	Int	Ext
	Semester I					
10030301	Food Safety, Hygiene and Sanitation I (Theory)	Major (Core)	2	50	50	0
		Major (Core)	2	50	0	50
		Major (Core)	2	50	50	0
10430311	Food Preservation	OEC	4	100	50	50
10630301	Food Safety, Hygiene and Sanitation I (Practical)	VSC	2	50	50	0
10730301	Physical and Analytical Chemistry (Practical)	SEC	2	50	50	0
	English - I	AEC (English)	2	50	0	50
	Inception of India Knowledge System	IKS (Generic)	2	50	0	50
		VEC	2	50	0	50
	Co-curricular activity	CC	2	50	50	0
			22	**550**	**300**	**250**
	Semester II					
20030311	Food Safety, Hygiene and Sanitation II (Theory)	Major (Core)	2	50	0	50
		Major (Core)	2	50	50	0
		Major (Core)	2	50	0	50
		VSC S2	2	50	0	50
		VSC S3	2	50	0	50
20430311	Basic Food Analysis (Pr.)	OEC	4	100	50	50
20730301	Human Physiology (Pr.)	SEC	2	50	50	0
	English -II	AEC (English)	2	50	50	0
		VEC	2	50	0	50
	Co-curricular activity	CC	2	50	50	0
			22	**550**	**250**	**300**

Exit with UG Certificate with 4 extra credits (44 + 4 credits)

Course Syllabus

Semester I

1.1 Major (Core)

Course Title	Food Safety, Hygiene and Sanitation- I
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Identify critical control points
	2. Describe food borne illness symptoms and preventative methods.
	3. Describe personal hygiene and health habits
	4. Describe how to prepare food according to safe time and temperature principles.
	5. Evaluate the recent developments in the control of food safety.
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to -
	1. Examine the sources of food contamination.
	2. Review of food borne illness and its prevention.
Content Outline	• **Food contamination and spoilage** 1) Sources of contamination 2) Characteristics of microbes 3) Conditions leading to food spoilage 4) Signs of spoilage in different food categories 5) Bacterial food intoxication- Staphylococcus aureus, Bacillus cereus
	6) Bacterial food infection- E.coli, Salmonella 7) Parasitic infestations 8) Source and control of food borne illness

Module 2 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to -
	1. Comprehend the importance of sanitation in every phase of food handling
	2. Have a deeper knowledge of clean food practices
	3. Understand the concept of Food Safety
Content Outline	• **Sanitation and food** 1) Sanitary aspects to be observed during food purchase and storage 2) Sanitary procedures to be followed while preparation, cooking and holding food 3) Need for an efficient cleaning program 4) Sanitary practices to be observed by food handlers • **Food safety issues** 1) Physical, chemical and microbiological contaminants 2) Food Safety system

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Assignment on signs of spoilage in different food categories
2. Assignment on sanitary aspects to be observed during food purchase and storage

References:

1. Kumar, Alok. (2022). *Food Hygiene, Safety and Quality*. I K International.
2. Roday, Sunetra. (2017). *Food Hygiene and Sanitation with case studies* (2nd ed.). McGraw Hill.
3. Lewis, Roger. (2017). *Essentials of Food Safety The Fight Against Micro organisms*.iUniverse.
4. Marriot, N.G., WesSchilling, M. and Gravani, R.B. (2018) *Principles of Food Sanitation* (6th ed.). Springer.
5. Marwah, Kavita. (2022). *Food Hygiene*. Meri Pustak.Com.
6. Orolugbagbe Gboyega (2015). *Handbook of Food Safety*. Astral International Pvt. Ltd.
7. Tamilselvan, B. (2023). *FSSAI Food Safety Handbook.* Notion Press
8. Tripathty, S.M. (2023). *Food Microbiology and Safety*. Laxmi Publications Pvt. Ltd.

1.4 Open Elective Courses/ Generic (OEC)

Course Title	Food Preservation
Course Credits	4
Course Outcomes	After going through the course, learners will be able to
	1. Understand the need and scope for food preservation
	2. Understand the basic principles underlying food preservation
	3. Prepare preserved products using different preservation methods
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Understand the various methods used for food preservation
	2. Understand basic principles of food preservation
Content Outline	• Introduction to Food Preservation 1) Importance and objectives of food preservation and traditional methods of food preservation. 2) Factors affecting post-harvest storage stability of foods. 3) Basic principles of Food Preservation 4) Causes of food spoilage-growth and activity of microorganisms and insects. 5) Action of enzymes and chemical reactions. 6) Physical changes in cereals, pulses, fruits and vegetables. 7) Methods of Food Preservation involving temperatures-Asepsis and removal of micro- Organisms 8) Use of high temperature 9) Factors affecting heat resistance, TDT and Pasteurization Canning and its use in food

Module 2 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Understand the methods or combination of methods for preserving different kinds of foods industry
	2. Understand use of various preservatives used in the industry
Content Outline	• Use of low temperature-Freezing, frozen storage, blanching. changes during storage and thawing. • Drying or dehydration-factors affecting dehydration, pretreatments and post treatments, different techniques of dehydration. • Other Methods of Food Preservation • Use of preservatives - 1. Classification of permissible food preservatives-class I and class Il preservatives, developed preservatives.
Module 3 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Prepare preserved products using different preservation methods
	2. Apply principles of food preservation.
Content Outline	• Preparation of fruit juice, squash and cordial. • Preparation of mix fruit jam, jelly, marmalade- compare and find the difference. • Preparation of pickles-mixed vegetables, mango pickle, lemon pickles, instant pickle, sweet pickle, oil pickle, vinegar pickle • Preparation of green chili sauce, tamarind chutney
Module 4 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Prepare preserved products using different preservation methods
	2. Learn the various preservation techniques and their applications.

Content Outline	• Preparation of tomato ketchup, sauce and chutney. • Preparation of instant mixes-*upma/dhokla/wadas* • Freezing of fruits and vegetables. • Dehydration of foods- vegetables, fruits, dried products like *kurdai, papad, chakali*, vermicelli etc. • Preparation of dried chutneys and masalas

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE) :

1. Assignment on Methods of Food Preservation
2. Preparation of products

References:

1. Desrosier, N. W. and Desrosier, J. N.(2004) *The Technology of Food Preservation* (4th ed.). CBS.
2. Sharma, A. (2019) *Textbook of food Science and Technology* (3rd ed.), CBS.
3. Sivasankar, B. (2022). *Food Processing and Preservation*. PHI.
4. Srivastava, P. (2013). *Methods of food Preservation*. Discovery Publishing House.
5. Srivastava, P. and Swaroop, A. (2014). *Techniques of food Preservation*. Discovery Publishing House.
6. Srivastava, R. P. and Sanjeev Kumar (2019). *Fruit and Vegetable Preservation* (3rd ed.). CBS.
7. Subbulakshmi, G. and Udipi, S. A. and Ghugre, Padmini. (2021). *Food Processing and Preservation*. New Age International Publishers.

1.5 Vocational Skill Courses (VSC)

Course Title	Food Safety, Hygiene and Sanitation
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Handle the different lab equipment and apply basic microbiological techniques for safety and hygiene of food
	2. Analyze the microbiological and hazardous causes of food spoilage.
	3. Perform the methods of detection and examination of micro-organisms that causes food poisoning.
	4. Apply the techniques to detect the limit of adulterants in different food samples and check for compliance related to FSSAI guidelines.
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Perform the methods of detection and examination of microorganisms that causes food poisoning.
	2. Analyse the microbiological and hazardous causes of food spoilage
Content Outline	• Examine water samples and check for physical quality and Bacteriological quality. • Determine microorganisms in milk and canned foods • Analyse sanitizers solution for detecting the quantity of Sodium Hypochlorite, Calcium Hypochlorite and iodine.
Module 2 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Perform the methods of detection and examination of microorganisms that causes food poisoning.
	2. Apply the techniques to detect the limit of adulterants in different food samples and check for compliance related to FSSAI guidelines

Content Outline	• Use kits for rapid detection of poisonous microorganisms. • Visual examination of growth, description of colony morphology, turbidity measure by colorimetry • Perform the Methods for Prevention of cross contamination. • Identify various kinds of additives- food colour, preservatives, artificial sweeteners, toxins, adulterants and pesticide residues

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE) :

1. Perform the practical on methods of detection and examination of microorganisms that causes food poisoning
2. Application of the techniques to detect the adulterants in different food samples

References:

1. Kumar, Alok. (2022). *Food Hygiene, Safety and Quality*. I K International.
2. Roday, Sunetra. (2017). *Food Hygiene and Sanitation with case studies* (2nd ed.). McGraw Hill.
3. Lewis, Roger. (2017). *Essentials of Food Safety The Fight Against Micro organisms*.iUniverse.
4. Marriot, N.G., WesSchilling, M. and Gravani, R.B. (2018) *Principles of Food Sanitation* (6th ed.). Springer.
5. Marwah, Kavita. (2022). *Food Hygiene*. Meri Pustak.Com.
6. Orolugbagbe Gboyega (2015). *Handbook of Food Safety*. Astral International Pvt. Ltd.
7. Tamilselvan, B. (2023). *FSSAI Food Safety Handbook.* Notion Press
8. Tripathty, S.M. (2023). *Food Microbiology and Safety*. Laxmi Publications Pvt. Ltd.

1.6 Skill Enhancement Courses (SEC)

Course Title	Physical and Analytical Chemistry (Practical)
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Acquaint the students to fundamental principles of physical and analytical chemistry
	2. Understand the diverse analytical processes and the various steps involved in the same
	3. Develop analytical skills
	4. Understand the various instrumentation techniques applied
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Understand the principles of physical chemistry
	2. Learn the various instrumentation techniques
Content Outline	**Physical Chemistry** • To determine the heat of neutralization of strong acid or strong base • To determine the relative fuel value of kerosene to ethyl alcohol • To determine the λ max and concentration of $CuSO_4$ colourimetrically • To determine the λ max and concentration of ascorbic acid colourimetrically • To determine the molar absorptivity coefficient of $K_2Cr_2O_7$ colourimetrically • To study the adsorption of acetic acid on charcoal from its solution • To study the hydrolysis of ester and find out the order of reaction • To determine the total soluble solids content of various food samples
Module 2 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Learn the various analytical techniques
	2. Develop analytical skills

Content Outline	**Analytical Chemistry** • To prepare 1N $KMnO_4$ solution • To prepare $KMnO_4$ solutions of different normalities using dilution method • To separate and identify a binary mixture of inorganications by paper chromatography • To separate and identify a binary mixture of amino acids by paper chromatography • To separate the mixture of ortho and para nitro aniline by thin layer chromatography • To separate the cations from the given mixture by column chromatography using cellulose • To determine the amount of Nickel gravimetrically as Ni-DMG

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Perform the practical on Physical and Analytical Chemistry in laboratory.

References:

1. Chatwell G. R. and Anand S. (2019). *Instrumental methods of chemical analysis*, Himalaya Publishing House.
2. Dittmar, William. (2023). *Analytical Chemistry, Laboratory Exercises*, Legal Street Press
3. Gilbert W. Castelian. (2004). *Physical Chemistry* 3rd Edition, Narosa Publishing House.
4. Huda S. Alhasan and Nadiyah Alahmadi (2021). *Principles of Qualitative Inorganic Analysis: Precipitation, Separation and Identification of Cations*. Bentham Science Publishers Pte.Ltd. Singapore.
5. S M Khopkar, (2022). *Basic Concepts Of Analytical Chemistry*, 5th edition, New Age International publishers, New Delhi.
6. Yeshajahu Pomeranz, Clifton E. Meloa, (2000). *Food Analysis: Theory and Practice*, 3rd edition, Aspen Publishers, United States of America.

Semester-II

2.1 Major (Core)

Course Title	Food Safety, Hygiene and Sanitation- II
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Identify critical control points
	2. Describe food borne illness symptoms and preventative methods
	3. Describe personal hygiene and health habits
	4. Describe how to prepare potentially hazardous food according to safe time and temperature principles.
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Develop awareness of the importance of following operating and cleaning procedures strictly
	2. Gain an insight into the importance of pest control
Content Outline	• **Plant sanitation** 1. Sanitary requirements for equipments 2. Cleaning agents and tests for sanitization strength 3. Importance of water in the cleaning process 4. Pest control
Module 2 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Comprehend the need for personal hygiene & sanitary food handling
	2. Examine the necessity for properly planned and executed training programmes

Content Outline	• **Personal hygiene, management and sanitation** 1) Sanitary practices to be observed by food holders 2) Importance of good habits exercise and recreation 3) Need for training in sanitation 4) Planning a training in program 5) Role of management in ensuring safe working conditions

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE) :

1. Assignment on Cleaning agents
2. Assignment on Role of management in ensuring safen working conditions

References:

1. Kumar, Alok. (2022). *Food Hygiene, Safety and Quality*. I K International.
2. Roday, Sunetra. (2017). *Food Hygiene and Sanitation with case studies* (2nd ed.). McGraw Hill.
3. Lewis, Roger. (2017). *Essentials of Food Safety The Fight Against Micro organisms*.iUniverse.
4. Marriot, N.G., WesSchilling, M. and Gravani, R.B. (2018) *Principles of Food Sanitation* (6th ed.). Springer.
5. Marwah, Kavita. (2022). *Food Hygiene*. Meri Pustak.Com.
6. Orolugbagbe Gboyega (2015). *Handbook of Food Safety*. Astral International Pvt. Ltd.
7. Tamilselvan, B. (2023). *FSSAI Food Safety Handbook.* Notion Press
8. Tripathty, S.M. (2023). *Food Microbiology and Safety*. Laxmi Publications Pvt. Ltd.

2.6 Open Elective Courses/ Generic (OEC)

Course Title	Basics of Food Analysis
Course Credits	4
Course Outcomes	After going through the course, learners will be able to
	1. Impart basic skills to do laboratory work.
	2. Understand general principles involved in instrumental method.
	3. Provide training in analysis of different food component or constituents.
	4. Detect food adulterant in commonly consumed foods.
	5. Understand qualitative standards and specifications laid down by food safety and food standards authority of India.
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Understand the significance of food analysis.
	2. Learn about sampling, and the techniques used in sampling.
Content Outline	• **Introduction to food analysis and its importance.** • **Sampling** 1. Definition of sampling 2. Sampling methods/ techniques. 3. Sampling Techniques in food analysis 4. General classification of sampling methods. 5. Advantages and disadvantages of Sampling • **General instrumental methods –** Working principle and uses of various laboratory instruments used in food analysis- pH meter, Colorimeter, Spectrophotometer, Centrifuge, Kjeldahl's apparatus for protein estimation, Soxhlet apparatus for fat estimation, Muffle furnace, Water bath.

<table>
<tr><td colspan="2">Module 2 (Credit 1) -</td></tr>
<tr><td rowspan="3">Learning Outcomes</td><td>After learning the module, learners will be able to</td></tr>
<tr><td>1. Explore analytical methods used in estimation of proximate principles.</td></tr>
<tr><td>2. Describe significance of chemical constants of fats and oils.</td></tr>
<tr><td>Content Outline</td><td>Quantitative Analysis of proximate principles:
• Estimation of moisture by AOAC method of dehydration.
• Estimation of crude fat/oil by solvent extraction method.
• Estimation of total ash by A.O.A.C. method.
• Estimation of protein by Macro Kjeldahl method.
Chemical constants of fats and oils.
• Determination of Acid value by NIN method.
• Determination of Saponification value by NIN method.
• Determination of Iodine value by NIN method.</td></tr>
<tr><td colspan="2">Module 3 (Credit 1) -</td></tr>
<tr><td rowspan="2">Learning Outcomes</td><td>After learning the module, learners will be able to</td></tr>
<tr><td>1. Learn analytical methods used in estimation of various food components.</td></tr>
<tr><td>Content Outline</td><td>Estimation of Food Components
• Estimation of total and free sugar from honey by Benedict’s/ Lane and Eynon’s quantitative reagent method.
• Determination of Ascorbic acid (Vit. C) from food sources by 2, 6, dichlorophenol indophenol method.
• Estimation of sodium chloride (NaCl) salt from butter and cheese.
• Estimation of Acidity in milk and ice cream by titrimetric method.</td></tr>
<tr><td colspan="2">Module 4 (Credit 1) -</td></tr>
<tr><td rowspan="3">Learning Outcomes</td><td>After learning the module, learners will be able to</td></tr>
<tr><td>1. Gain knowledge about food adulterants and know methods of analysis.</td></tr>
<tr><td>2. Detect adulterants present in various foods</td></tr>
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Content Outline	**Qualitative analysis of common food adulterants** • Fats and oils • Spices and condiments • Milk and milk products • Cereals and pulses • Sugar, honey and jaggery • Tea and coffee • Sweets and confectionary

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Perform the practical on Food Analysis in laboratory.

References:

1. Deshpande, H.W. and Poshadri, A.(2023). *Food Analysis and Quality Control*. Nipa Genx Electronic Resources & Solutions Pvt Ltd
2. Pomeranz, Y. and Meloan, C.E. (2004). *Food analysis Theory and Practice* (3rd ed.). CBS Publishers.
3. Sathe, A. Y. (1999). *A First Course in Food Analysis*. New age International Pvt. Ltd.
4. Sehgal, Shalini. (2020). *A Laboratory Manual of Food Analysis*. Dreamtech Press.
5. Siva Subramanian, N., Ushasree, P. and Reddy, G. Naveen Kumar. (2022). *Textbook of Food Analysis.* Unique Pub International.

2.7 Skill Enhancement Courses (SEC)

Course Title	Human Physiology Pr
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Know the basic concepts in human physiology
	2. Understand the association between human physiology and Nutrition
	3.Develop an understanding of the functioning of various systems of the human body
	4. Develop basic skills for first-aid and measuring and interpreting basic body parameters
Module 1 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Understand the human skeleton and enable them to identify various bones in the body
	2. Perform simple clinical tests like estimation of haemoglobin and blood group and blood pressure etc and interpret the reports
Content Outline	1. Study of human skeleton and identification of bones. 2. Estimation of haemoglobin and understanding and interpretation of hemogram 3. Types of blood groups and Estimation of blood groups 4. Demonstrations of peripheral blood smear. Importance of complete blood count. 5. Measurement of pulse rate and blood pressure and interpretation.
	6. Different apps and instruments 7. Measurement of blood glucose using glucometer and its interpretation and discussion 8. Discussion of normal components of urine. Test for abnormal components like sugar, albumin and acetone and discussion on diseases in which they are found.

Module 2 (Credit 1) -	
Learning Outcomes	After learning the module, learners will be able to
	1. Administer first aid for common emergency situations.
	2. Carry out the basic principles of home nursing.
Content Outline	1. FIRST AID a) Definition, aims, qualities of first aider, contents of first aid box. b) Different types of bandages and bandaging techniques. 2. WOUNDS a) Classification, dressing and management of hemorrhage- basic principles and discussion about bleeding from various parts of body. 3. FRACTURE a) Types, symptoms, management. b) Sprain and dislocation ***First Aid for*** - foreign bodies in eye, ear, nose, skin. ***First Aid for -*** fainting, burns, heat stroke, asthma, convulsions, electric shock and heart attack. ***First Aid for -*** common poisoning, dog bite, snake bite, bee-sting and scorpion bite. 4. BASIC PRINCIPLES OF HOME NURSING- a) Measuring body temperature, steam inhalation, body sponging, taking care of bed ridden patient and enema. b) Cardio pulmonary resuscitation

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Individual measurement of body temperature, blood pressure, determination of blood group
2. Correlating measurements with health conditions.
3. Practicing first aid processes.

References:

1. First Aid, St. John's Ambulance Association
2. Guyton, A.C., Hall J.E. (2020). *Textbook of Medical Physiology*, Prism Books Pvt Ltd., Bangalore.
3. Hutchison (2017). *Clinical Methods: An Integrated Approach to Clinical Practice*, Elsevier.
4. Nitin A J. (2022). 14th ED. *C C Chatterjee's Human Physiology*. CRS Publishers and Distributors PVT LTD.