

**SYLLABUS  
SEMESTER II**

**VFP2G05TB - Dairy Technology  
(GENERAL COURSE - 05)**

**Total Credits: 4**

**Total Lecture Hours: 60 (4 Hours/ Week)**

**Aim of the course:** To inculcate the knowledge regarding various dairy products and its processing techniques.

**Course Overview and Context**

- ☐ To understand about the products that can be made from milk.
- ☐ To understand the processing and storage of dairy products.
- ☐ To know about the quality control measures applied in dairy industries.
- ☐ To have a basic idea about their processing and products which can be made at a small scale

**Content**

<b>MODULE</b>	<b>CONTENT</b>	<b>LECTURE</b>
<b>1</b>	<b>Introduction- Milk - Definition, sources, and composition of milk, factors effecting composition of milk, physiochemical properties of milk, grading of milk-definition and types of grades, collection and transportation of milk.</b>	<b>10</b>
<b>2</b>	<b>Processing of market milk- Flowchart of milk processing, Reception, Different types of cooling systems. Clarification and filtration process, standardization- Pearson's square method, pasteurization-LTLT, HTST and UHT process- continuous pasteuriser, Sterilisation and Homogenisation, Cream separation- centrifugal cream separator, bactofugation</b>	<b>15</b>

<b>3</b>	<b>Special milks- Skim milk, evaporated milk, condensed milk, standardized milk, toned milk, double toned milk, flavoured milk, reconstituted milk.</b>	<b>05</b>
<b>4</b>	<b>Indigenous and Fermented milk products- Product description, methods for manufacture of butter, cheese, khoa, paneer, shrikhand, ghee. Spray drying system: dried milk- whole milk and skim milk powder</b>	<b>20</b>
<b>5</b>	<b>In-Plant cleaning system- Introduction to Cleaning in-place (CIP) system - cleaning procedure, Cleaning efficiency, Methods of cleaning in food industry, cleaning solutions – Detergents, Sanitizers. Personal hygiene in dairy plant.</b>	<b>10</b>
		<b>Total = 60</b>

## **Learning Resources**

### **References**

1. Joshi.V.K., (2015), "Indigenous Fermented Foods of South Asia", CRC Press.
2. Alan H. Varnam, (2012), "Milk and Milk Products: Technology, chemistry and microbiology", Springer Science & Business Media Publishers.
3. Robinson, R. K., (2012), "Modern Dairy Technology: Volume 2 Advances in Milk Products", Springer Science & Business Media Publishers

**VFP2G06TB – Sanitation and Hygiene  
(GENERAL COURSE - 06)  
Semester II**

**Total Credits: 4**

**Total Lecture Hours: 60 (4 Hours/ Week)**

**Aim of the Course:** To understand and impart knowledge of importance of food hygiene, sanitation, and safety during food processing unit.

**Course Overview and Context**

- ☐ To know the principles and applications of sanitation in food industry.
- ☐ To know about the various types of Sanitation techniques applicable in the food industry
- ☐ To gain an understanding of food hygiene, sanitation and safety during food processing unit operations.

**Content**

<b>MODULE</b>	<b>CONTENT</b>	<b>LECTURE</b>
<b>1</b>	<b>Sanitation and Health - Definition, importance of sanitation, application of sanitation to food industry and food service establishments. Microorganisms and their characteristics, control of microbial growth in food. Food contamination and spoilage, food borne diseases.</b>	<b>13</b>
<b>2</b>	<b>Hygiene and food handling- Purchasing and receiving safe food, food storage, sanitary procedures in food preparation, serving and displaying of food.</b>	<b>10</b>

<b>3</b>	<b>Environmental Sanitation - Location and layout of premises, constructional details, sanitary requirements for equipments, guidelines for cleaning equipments, cleaning procedures, pest control, water supply, storage and waste disposal, environmental pollution.</b>	<b>15</b>
<b>4</b>	<b>Hygiene Practices in food industry- Introduction, necessity, personnel hygiene, sanitary practices, safety at work place.</b>	<b>12</b>
<b>5</b>	<b>Sanitation regulations and Standards- Introduction, regulatory agencies, control of food quality, local health authority. Food sanitation check lists.</b>	<b>10</b>
		<b>Total = 60</b>

## **Learning Resources**

### **References**

1. Marriott, Norman (2013), “Principles of Food Sanitation”, Springer Science & Business Media Publishing.
2. Roday S, (2011) (2002), “Food Hygiene and Sanitation”, McGraw Hill Publishing Company Limited.
3. H. L. M. Lelieveld, John Holah, David Napper, (2014), “Hygiene in Food Processing: Principles and Practice”, Elsevier Publications

**VFP2S04PB – Dairy Technology (P)**  
**(SKILL COURSE - 04)**

**Total Credits: 6**

**Total Laboratory Hours: 90 (6 Hours/ Week)**

**Aim of the course:** To develop the skills in dairy product preparation and to familiarise with the dairy plant equipments.

**Course Overview and Context**

- ☐ To gain knowledge about preparation of some dairy products
- ☐ To perform chemical analysis of milk sample
- ☐ To understand different processing equipment in dairy plant

**Content**

MODULE	CONTENT	LECTURE
1	Milk Testing- Platform Tests.	5
2	Determination of Activity (Titrable Acidity) of Milk.	5
3	Determination of fat and SNF content in milk.	10
4	Clot on boiling test for milk	10
5	Determination of specific gravity of milk.	10
6	Preparation of Lassi.	10
7	Preparation of khoa	10
8	Preparation of Basundi	10
9	Preparation of chakka and shrikand	10
10	Preparation of kalakand	10
		<b>Total = 90</b>

**VFP2S05PB– Critical Thinking, Academic Writing and Presentation Skills  
(SKILL COURSE – 02)  
Semester II**

**Total Credits: 6**

**Total Lecture Hours: 90 (6 Hours/ Week)**

**Aim of the Course:** To introduce students to the concept of critical thinking, help develop analytical skills and improve academic writing and presentation skills.

**Course Overview**

□ The course seeks to introduce the students to the concept of critical thinking, enlighten students on academic writing and develop presentation skills.

**Competencies of the course:**

- To make the students aware of the fundamental concepts of critical reasoning and to enable them to read and respond critically, drawing conclusions, generalizing, differentiating fact from opinion and creating their own arguments.
- To enable students to structure arguments and develop research papers/assignments that is free from fallacies.
- To assist the students in developing appropriate and impressive writing styles for various contexts.
- To help students rectify structural imperfections and to edit what they have written.
- To equip students for making academic presentations effectively and impressively.

**Content**

<b>MODULE</b>	<b>CONTENT</b>	<b>LECTURE</b>
<b>1</b>	<b>Critical Thinking - Introduction to critical thinking, Benefits, Barriers, Reasoning, Arguments, Deductive and inductive arguments, Inferential comprehension, Critical thinking in academic writing, Elements: Clarity, Accuracy, Precision and Relevance.</b>	<b>20</b>

2	<b>Research for Academic writing - Data collection, Use of print, electronic sources and digital sources. Selecting key points, Note making, paraphrasing, summary.</b>	20
3	<b>Writing Process- Documentation, Plagiarism. Structure and Content: Title, Body paragraphs, Introduction and conclusion. Revising, Proof-reading.</b>	15
4	<b>Writing Models - Letters, Letters to the editor, Resume and covering letters, e-mail, Seminar papers, Project reports, Notices, Filling application forms, Minutes, agenda, Essays</b>	15
5	<b>Presentation Skills- Soft skills for academic presentations, Effective communication skills, Structuring the presentation, Choosing appropriate medium, Flip charts, OHP, PowerPoint presentation, Clarity and brevity, Interaction and persuasion, Interview skills, Group Discussions</b>	20
		Total = 90

## **Learning Resources**

### **Reference**

1. Anderson Marilyn, (2010), "Critical Thinking, Academic, Writing and Presentation Skills", Pearson Education and Mahatma Gandhi University.
2. Alec Fisher (2011), "Critical Thinking: An Introduction", Cambridge University Press, New Delhi.
3. Stephen Bailey, (2010), "Academic Writing: A Handbook for International Students", Routledge Publishers.
4. Ilona Leki (1998), "Academic Writing: Exploring Processes and Strategies", Cambridge University Press. New Delhi.
5. Patsy McCarthy, Caroline Hatcher (2002), "Presentation Skills: The Essential Guide for Students (StudySkills), SAGE Publishers.

**VFP2G07TB – Food Science and Nutrition II  
(GENERAL COURSE - 07)  
Semester II**

**Total Credits: 4**

**Total Lecture Hours: 60 (4 Hours/ Week)**

**Aim of the course:** To understand about the macronutrients their functions, digest, absorption and storage mechanisms and their relationship with good health and sustenance of life.

**Course Overview and Context**

- ☐ To know and understand the functions, importance of all nutrients present in foods.
- ☐ To know about the various types of nutrients and their functions in the body.
- ☐ To familiarize with the recent advances in field of nutrition
- ☐ To gain knowledge about the latest laws relevant to the food industry

**Content**

MODULE	CONTENT	LECTURE
1	<b>Body Composition- Introduction, five levels of body composition, body compartments, Estimation of body composition (direct and indirect methods), Body Composition changes. Status/Length, Weight, Body Mass Index, Circumference measurements, Skin fold measurements.</b>	12



2	<b>Carbohydrates- Definition, classification, digestion, absorption, transport, distribution, storage and excretion. Glycemic Index and Glycemic load. Metabolic utilization and regulation of blood glucose concentration, Non- glycemic carbohydrates- Fibre - properties, Physiological and metabolic effects, Nutritional and health significance, requirements. Resistant starch – factors influencing resistant starch content in foods and potential health benefits.</b>	13
3	<b>Proteins - Definition, classification of amino acids – Essential and non essential, structure of proteins, digestion, absorption, transport, distribution, storage and excretion. Protein Metabolism – Transamination, Deamination and Urea Cycle.</b>	13
4	<b>Lipids- Definition, classification, structure, physical and chemical properties. Digestion</b>	13
5	<b>Inborn errors of metabolism- Definition, Inborn errors of carbohydrate metabolism - Glycogen storage diseases. Inborn errors of protein metabolism - phenyl ketonuria.</b>	9
		Total = 60

## Learning Resources

### References

1. James L Groff and Sareen S Gropper, (2009) “Advanced Nutrition and Human Metabolism”, Fourth Edition, Wadsworth Publishing Company.
2. Hui,Y H, (2007), “ Handbook of Food Products Manufacturing” Vol. I , Wiley-Interscience, New Jersey Publishers.
3. Maurice B Shils, Moshe Shike A, Catherine Ross, Benjamin Cabellero, Robert J Cousins, (2006), “Modern Nutrition in Health and Disease”, Lippincott Williams al Wilkins.
4. Michael J Gibney, Ian A Macdonald and Helen M Roche (2003) “Nutrition and Metabolism”, TheNutrition Society Textbook Series, Blackwell Publishing, First Edition.

**VFP2S06PB – Business Communication  
(SKILL COURSE - 06)**

**Total Credits: 6**

**Total Lecture Hours: 90 (6 Hours/ Week)**

**Aim of the course:** To develop basic communication skills to communicate interpersonally and to study about tools to overcome the barriers of communication.

**Course Overview and Context**

- ☐ To understand the basics of finance and marketing.
- ☐ To have a basic idea about mobilization of human and financial resources
- ☐ To know about the various consumer protection laws.
- ☐ To understand the legal, social, psychological factors that affect starting up a business venture

**Content**

<b>MODULE</b>	<b>CONTENT</b>	<b>LECTURE</b>
1	<b>Basis of Communication- Meaning, importance and process, need and objectives of communication, 7Cs of communication, barriers of communication, How to overcome communication barrier.</b>	18
2	<b>Means/Media of Communication- Verbal and nonverbal communication channel of formal and informal communication.</b>	12
3	<b>Listening as a communication tool- Importance types of listening, Barriers to effective listening. How to make listening effective. Speeches and presentation – characteristics of a good speech. How to make effective presentation- planning, preparation, organizing, rehearsing and delivery.</b>	25

4	<b>Groups- Importance of features, advantage and disadvantages techniques of group decision making-Brain storming sessions, Nominal group technique, solving problems in groups.</b>	15
5	<b>New Trends in Business communication- E mail, teleconferencing, video conferencing, SMS</b>	20
		<b>Total = 90</b>

## **Learning Resources**

### **References**

1. Mary Ellen Guffey, Dana Loewy, (2015), “Essentials of Business Communication”, Cengage Learning.
2. Carol M. Lehman, Debbie D. DuFrene, (2010), “Business Communication”, Cengage Learning.
3. Peter Hartley, Clive Bruckmann, (2008), “Business Communication”, Routledge Publishers.

## B) Examination & Credit Pattern:

### Paper code can be read as-

“VFP” denotes – Vocational Food Processing,

“1” Denotes- Semester number is 1,

“G” denotes- General subject,

“01” denotes- It is general subject number 01 of semester,

“TB” denotes- It is theory batch subject, AND

“PB” denotes- It is practical batch subject.

**NOTE- INDICATIONS ARE SAME FOR WHOLE SYLLABUS.**

Sr. No	Paper	Paper Code	Subject	Internal Marks	External Marks	Total Marks	Credit
<b>Semester-I</b>							
1	1	VFP1G01TB	Bakery and Confectionery Technology	50	50	100	03
2	2	VFP1G02TB	Principles of Food Preservation	50	50	100	03
3	3	VFP1G03TB	Food Chemistry	50	50	100	03
4	4	VFP1S01PB	Bakery and Confectionery Technology (Practical)	75	75	150	06
5	5	VFP1S02PB	Communication Skills in English (Practical)	75	75	150	06
6	6	VFP1G04TB	Food Science and Nutrition I	50	50	100	03
7	7	VFP1S03PB	FOOD CHEMISTRY (Practical)	75	75	150	06
<b>Total Credit</b>							<b>30</b>
<b>Semester-II</b>							
8	8	VFP2G05TB	Dairy Technology	50	50	100	03
9	9	VFP2G06TB	Sanitation and Hygiene	50	50	100	03

10	10	VFP2S04PB	Dairy Technology (P)	75	75	150	06
11	11	VFP2S05PB	Critical Thinking, Academic Writing and Presentation Skills (P)	75	75	150	06
12	12	VFP2G07TB	Food Science and Nutrition II	50	50	100	03
13	13	VFP2S06PB	Business Communication (P)	75	75	150	06
<b>Total Credit</b>							<b>30</b>
<b>Total Credit Sem-I &amp;II</b>							<b>60</b>