

**MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous),  
Pasumalai  
Curriculum**

*(For the student admitted during the academic year 2023-2024 onwards)*

Course Code	Title of the Course	No. of Hours /week		No. of Credits		Maximum Marks		
		T	P	T	P	Int	Ext	Total
<b>FIRST SEMESTER</b>								
<b>Part – I</b>	<b>General Education</b>							
23DBAG11	Business Communication	4	-	4	-	40	60	100
23DBAG12	Entrepreneurship	4	-	4	-	40	60	100
23DCSGP1	Office Automation Lab	-	4	-	4	40	60	100
	<b>Total</b>	<b>8</b>	<b>4</b>	<b>8</b>	<b>4</b>			
<b>Part – II</b>	<b>Skill component</b>							
23DFQSP1	Introduction to Food Science Lab	2	4	2	4	40	60	100
23DFQSP2	Food Quality Control and Management Lab	2	4	2	4	40	60	100
23DFQSP3	Milk and Milk Product Lab	2	4	2	4	40	60	100
	<b>Total</b>	<b>6</b>	<b>12</b>	<b>6</b>	<b>12</b>			
<b>SECOND SEMESTER</b>								
<b>Part – I</b>	<b>General Education</b>							
23DBAG21	Small Business Management	4	-	4	-	40	60	100
23DFQG21	Food Preservation	4	-	4	-	40	60	100
23DCSGP2	Multimedia Lab	-	4	-	4	40	60	100
	<b>Total</b>	<b>8</b>	<b>4</b>	<b>8</b>	<b>4</b>			
<b>Part – II</b>	<b>Skill component</b>							
23DFQSP4	Technology of Dairy Products Lab	2	4	2	4	40	60	100
23DFQSP5	Skill Development in Food Preparation Lab	2	4	2	4	40	60	100
23DFQS21	Internship	-	6	-	6	40	60	100
	<b>Total</b>	<b>4</b>	<b>14</b>	<b>4</b>	<b>14</b>			
	<b>Grand Total</b>	<b>26</b>	<b>34</b>	<b>26</b>	<b>34</b>			



**MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)  
COMMUNITY COLLEGE  
ALL DIPLOMA COURSES**

**(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>BUSINESS COMMUNICATION</b>			
<b>Course Code</b>	<b>23DBAG11</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>General Education</b>	<b>4</b>	<b>-</b>	<b>4</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>To enable the students to acquire the written and oral business communication skills.</li> <li>To Understand about trade enquires, &amp; also the concept of collection letter.</li> <li>Provide foundation and means of writing business letters.</li> <li>To write resume for application for different positions independently.</li> <li>To acquaint knowledge on report writing and able to write business reports.</li> </ol>				
<b>UNIT: I</b>	<b>BUSINESS COMMUNICATION</b>			12Hrs
Introduction - Meaning - Definition - Characteristics – Process - Essentials of Effective Communication - Forms of Communication - Types - Media of Communication - Written – Oral - Visual - Audio Visual - Computer based Communication - Barriers and remedies.				
<b>UNIT: II</b>	<b>WRITTEN COMMUNICATION</b>			12Hrs
Written Communication - Meaning - Business Letters - Essentials of a good Business Letter - Layout - Trade Letters – Enquiries & Offers – Quotations – Orders - Circular Letters - Sales Letters - E-mail Etiquettes.				
<b>UNIT: III</b>	<b>ORAL COMMUNICATION</b>			12Hrs
Oral Communication – Meaning - Oral and other forms of Communication – Speeches - Group communication - Presentations - Listening – Dialogue skills.				
<b>UNIT: IV</b>	<b>RESUME DRAFTING</b>			12Hrs
Resume Drafting - Application for a situation – Structure - Preparation of Resume - Preparation of Curriculum vitae – Drafting an application for different positions - Resume-Creation of Blogs.				
<b>UNIT: V</b>	<b>REPORT WRITING</b>			12Hrs
Report Writing - Meaning –Importance- Types of Business Reports - Structure of a Report - Oral and written reports-Characteristics of a good report -Drafting of Business Reports -Proposal – Meaning – Types of proposal.				
<b>Books for Study:</b>				

1. N.S. Raghunathan & B. Santhanam, **“Business Communication”**, fourth Edition, 2017 Margham publication.

**Books for References:**

1. R.S.N. Pillai&Bagavathi, **“Modern Commercial Correspondence”**, 2007, S. Chand& Company Ltd, New Delhi.

2. Rajendra Pal & J.S. Korlahalli, **“Essentials of Business Communication”**, Thirteenth Edition, 2013, Sultan Chand & Sons, New Delhi.

**Total Lecture Hours | 60**

**COURSE OUTCOME**

**CO1:** Acquire the written and oral business communication skills.

**CO2:** Gain theoretical framework in writing business letters

**CO3:** Draft business, trade and circular letters comprehensively

**CO4:** Write resume for application for different positions independently

**CO5:** Acquaint knowledge on report writing and able to write business reports

**LESSON PLAN**

<b>UNIT</b>	<b>BUSINESS COMMUNICATION</b>	<b>Hrs</b>	<b>Mode</b>
I	Business Communication	12Hrs	PPT, Group Discussion, Seminar, Quiz, Assignment and Activity
II	Written Communication	12Hrs	
III	Oral Communication	12Hrs	
IV	Resume Drafting	12Hrs	
V	Report Writing	12Hrs	



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COMMUNITY COLLEGE  
ALL DIPLOMA COURSES  
(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>ENTREPRENEURSHIP</b>			
<b>Course Code</b>	<b>23DBAG12</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>General Education</b>	<b>4</b>	<b>-</b>	<b>4</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>To understand the areas of discipline of management &amp; entrepreneurship.</li> <li>To acquire necessary knowledge and skills required for organizing and carrying out Entrepreneurial activities.</li> <li>To master the knowledge necessary to plan entrepreneurial activities.</li> <li>To motivate young people to set up own ventures and contribute to national economic development.</li> <li>To create more employment opportunities.</li> </ol>				
<b>UNIT: I</b>	<b>ENTREPRENEUR &amp; ENTREPRENEURSHIP</b>			<b>12Hrs</b>
Entrepreneurship – Meaning – Characteristics –Types – Functions of entrepreneurs –Distinction between entrepreneur and manager. Entrepreneurship - Concept– Nature and characteristics – Entrepreneurship and Intrapreneurship – Role of entrepreneurship in economic development.				
<b>UNIT: II</b>	<b>NATURE AND SCOPE OF BUSINESS</b>			<b>12Hrs</b>
Meaning of business – Characteristics of business – Distinction between business, profession and employment – Components of business, – Inter-relationship between industry, commerce and trade – Requisites of success in business.				
<b>UNIT: III</b>	<b>WOMEN ENTREPRENEURS</b>			<b>12Hrs</b>
<b>Women Entrepreneurs</b> – Definition – Need – Functions – Qualities of Women Entrepreneurs – Problems faced by women entrepreneurs – Suggestions for the development of women entrepreneurs.				
<b>UNIT: IV</b>	<b>FRANCHISING</b>			<b>12Hrs</b>
Definition – Advantages – Successful Examples – Franchising offers in India – List of Franchise offers in India – Precautions – Types of Franchises.				
<b>UNIT: V</b>	<b>ENTREPRENEURSHIP DEVELOPMENT IN INDIA</b>			<b>12Hrs</b>
Emergence of entrepreneurial class in India – Environmental factors affecting entrepreneurship – Locational mobility of entrepreneurs – Entrepreneurship development programme – Institutions for entrepreneurship development – Entrepreneurial performance in India.				
<b>Books for Study:</b>				
1. Dr. Gupta. C.B and Dr. S.S. Khanka., Entrepreneurship and Small Business Management, New Delhi, 2019				
<b>Books for References:</b>				

1. Jeyashree Suresh, Entrepreneurial Development, Margham Publications, Chennai, 2019.
2. Dr. P.T. Vijayshree & Dr. M. Alagammai, Entrepreneurship & Small Business Management, Margham Publications, Chennai, 2016.

**Total Lecture Hours | 60**

**COURSE OUTCOME**

<b>CO1:</b>	Gain understanding of the concepts of Entrepreneurship and their development in all forms and shapes.
<b>CO2:</b>	Understand entrepreneurial environment impacted by the social, economic, cultural & legal conditions.
<b>CO3:</b>	Understand the entrepreneurial process from idea generation, to concept development and creation of the venture.
<b>CO4:</b>	Provide the students with necessary inputs for creation of new ventures and develop entrepreneurial behavior.
<b>CO5:</b>	Identify and develop opportunities for an entrepreneur in an uncertain and inflexible environment and ways and means to minimize the external threats.

**LESSON PLAN**

<b>UNIT</b>	<b>ENTREPRENEURSHIP</b>	<b>Hrs</b>	<b>Mode</b>
I	Entrepreneur & Entrepreneurship	12Hrs	PPT, Group Discussion, Seminar, Quiz, Assignment and Activity
II	Nature and Scope of Business	12Hrs	
III	Women Entrepreneurs	12Hrs	
IV	Franchising	12Hrs	
V	Entrepreneurship Development in India	12Hrs	



**MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)  
COMMUNITY COLLEGE  
ALL DIPLOMA COURSES  
(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>OFFICE AUTOMATION LAB</b>			
<b>Course Code</b>	<b>23DCSGP1</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>General Education</b>	<b>-</b>	<b>4</b>	<b>4</b>
<b>COURSE OBJECTIVES:</b>				
<p>1. To learn objective of this course is familiarizing the students with the innovations of in computer applications in business.</p> <p>2. To understand the basic computer knowledge and also enable the students to appreciate the practical details of computer.</p> <p>3. To enable you, the user to create and edit documents.</p> <p>4. To create and manipulate simple.</p> <p>5. To construct formulas, including the use of built in functions, and relative and absolute references in Ms-Excel.</p>				
<b><u>LIST OF ASSIGNMENTS (MS WORD)</u></b>				
<p>7. Create a news-paper document with at least 200 words,</p> <ol style="list-style-type: none"> <li>Use margins as, top: 1.5, bottom:2, left:2, right:1 inches.</li> <li>Use heading “Gandhi Jayanti”, font size: 16, font color: red, font face: Arial Black.</li> <li>With first letter “dropped” (use drop cap option) of the first paragraph containing a picture at the right side</li> <li>Use three columns from the second paragraph onwards till the half of the page.</li> <li>Then use heading “Computer basics”</li> <li>Create paragraph using two columns till the end of the page.</li> </ol> <p>8. Create a flowchart using,</p> <ol style="list-style-type: none"> <li>Proper shapes like ellipse, arrows, rectangle, and parallelogram.</li> <li>Use grouping to group all the parts of the flowchart into one single object.</li> </ol> <p>9. Create a table using table menu with,</p> <ol style="list-style-type: none"> <li>At least 5 columns and 10 rows.</li> <li>Merge the first row into one cell.</li> <li>Merge the second row into one cell, then split the second row into three cells.</li> <li>Use proper table border and color.</li> <li>Insert proper content into the table with proper text formatting.</li> </ol> <p>10. Create a table using two columns,</p> <ol style="list-style-type: none"> <li>The left column contains all the short-cut keys and right side column contains the function of the short-cut keys.</li> </ol>				

- a. Insert a left column using layout option. Name the heading as Serial No.
11. Create two letters with the following conditions in Ms Word and find the difference.
- Write a personal letter to your friend using at least 100 words and two paragraphs. The date must be in top-right corner. Use „justify“ text-alignment and 1.5 line spacing for the body of the letter. Letter must contain proper salutation and closing.
  - Use step by step mail-merge wizard to design a letter. (Mailing  step by step mail merge wizard  letters  start from a template  select template  letters  select proper template  create new document  OK)
12. Create a letter, which must be sent to multiple recipients.
- Use Mail-Merge to create the recipient list.
  - Use excel sheet to enter the recipient.
  - Start the mail merge using letter and directory format. State the difference.

**LIST OF ASSIGNMENTS (MS EXCEL)**

4. Create a table “Student result” with following conditions.
- The heading must contain, Sl. No., Name, Mark1, Mark2, Mark3, Total, average and result with manual entry.
  - Use formulas for total and average.
  - Find the name of the students who has secured the highest and lowest marks.
  - Round the average to the nearest highest integer and lowest integer (use ceiling and floor function respectively).
5. Do as directed
- Create a notepad file as per the following fields  
Slno      name   th1      th2      th3      th4      th5      total   %      grade
  - Import this notepad file into excel sheet using „data  from text“ option.
  - Grade is calculated as,
    - If  $\% \geq 90$ , then grade A
    - If  $\% \geq 80$  and  $< 90$ , then grade B
    - If  $\% \geq 70$  and  $< 80$ , then grade C
    - If  $\% \geq 60$  and  $< 70$ , then grade D
    - If  $\% < 60$ , then grade F
6. Create a sales table using the following data,

Item	Year1	Year2	Year3	Year4
Item1	1000	1050	1100	1200
Item2	950	1050	1150	1200
Item3	1100	1200	1200	1300

- Draw the bar-graph to compare the sales of the three items for four years using insert option.
- Draw a line-graph to compare the sales of three items for four years using insert option.
- Draw different pie-charts for the given data using insert option.
- Use condition, to highlight all the cells having value  $\geq 1000$  with red

color (use conditional formatting).

**LIST OF ASSIGNMENTS (MS POWERPOINT)**

4. Create a power-point presentation with minimum 5 slides.
  - a. The first slide must contain the topic of the presentation and name of the presentation.
  - b. Must contain at least one table.
  - c. Must contain at least 5 bullets, 5 numbers.
  - d. The heading must be, font size:32, font-face: Arial Rounded MT Bold, font-color: blue.
  - e. The body must be, font size: 24, font-face: Comic Sans MS, font-color: green.
  - f. Last slide must contain „thank you“.
5. Create a power-point presentation with minimum 10 slides
  - a. Use word art to write the heading for each slides.
  - b. Insert at least one clip-art, one picture
  - c. Insert at least one audio and one video
  - d. Hide at least two slides
6. Create a power-point presentation with minimum 5 slides
  - a. Use custom animation option to animate the text; the text must move left to right one line at a time.
  - b. Use proper transition for the slides.

**Books for Study:**

1. Dr. P. Rizwan Ahmed, *Office Automation* , Margham publication, Chennai, 2019 reprint.

**Books for References:**

1. Comdex 14-1in-1 Computer course Kit ,Vikas Gupta.
2. Master in Ms-Office, Bittu Kumar.

	<b>Total Lecture Hours</b>	<b>60</b>
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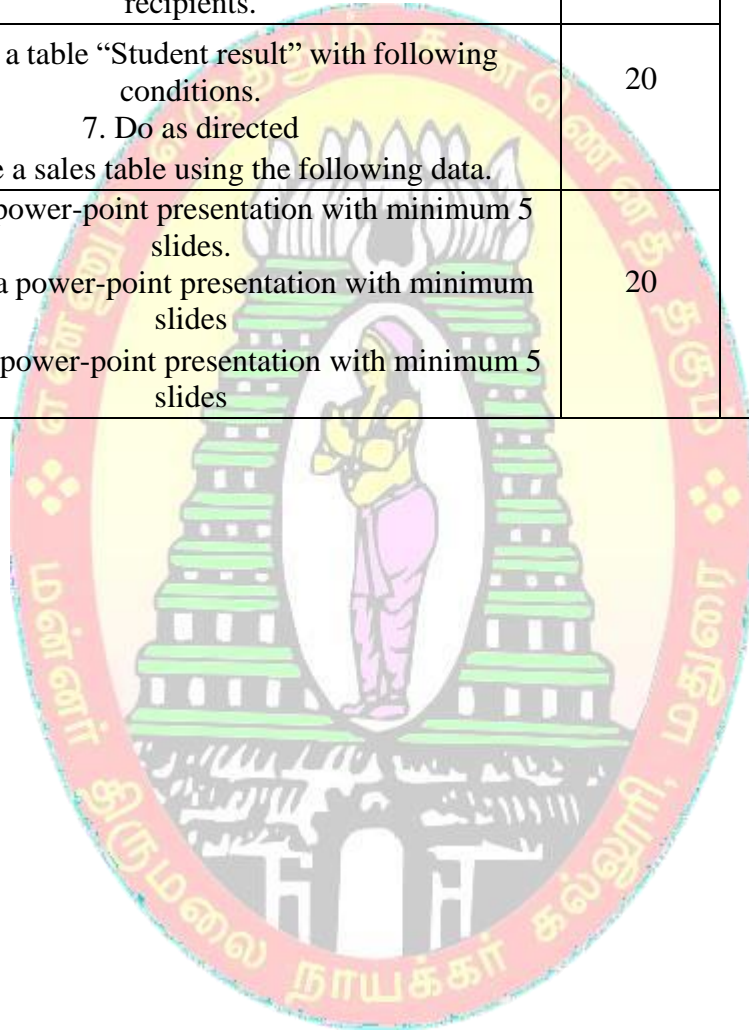
**COURSE OUTCOME**

<b>CO1:</b>	Acquire knowledge on editor, spreadsheet and presentation software
<b>CO2:</b>	Understand and discuss about the use of Office Package in daily life
<b>CO3:</b>	Give hands on training to the students to create and format documents using MSWord
<b>CO4:</b>	Construct charts in MS-Excel
<b>CO5:</b>	Design presentation with efficient slides



**LESSON PLAN**

<b>OFFICE AUTOMATION LAB</b>	<b>Hrs</b>	<b>Mode</b>
<p>Exercise:</p> <ol style="list-style-type: none"> <li>1. Create a news-paper document with at least 200 words.</li> <li>2. Create a flowchart using.</li> <li>3. Create a table using table menu.</li> <li>4. Create two letters with the following conditions in Ms Word and find the difference.</li> <li>5. Create a letter, which must be sent to multiple recipients.</li> </ol>	20	Laboratory experiments
<ol style="list-style-type: none"> <li>6. Create a table “Student result” with following conditions.</li> <li>7. Do as directed</li> <li>8. Create a sales table using the following data.</li> </ol>	20	
<ol style="list-style-type: none"> <li>9. Create a power-point presentation with minimum 5 slides.</li> <li>10. Create a power-point presentation with minimum slides</li> <li>11. Create a power-point presentation with minimum 5 slides</li> </ol>	20	





**MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)**  
**COMMUNITY COLLEGE**  
**DIPLOMA IN FOOD PROCESSING AND QUALITY MANAGEMENT**  
 (For those who joined in 2023-2024 and after)

<b>Course Name</b>	<b>INTRODUCTION TO FOOD SCIENCE LAB</b>			
<b>Course Code</b>	<b>23DFQSP1</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>Skill component</b>	<b>2</b>	<b>4</b>	<b>6</b>
<b>Course Objectives:</b>				
<ol style="list-style-type: none"> <li>1. To Study the science behind the food products.</li> <li>2. To Analyze various methods of cooking.</li> <li>3. To highlight the importance of the role of difference foods in cookery.</li> <li>4. To provide knowledge on food groups.</li> <li>5. To Gain ideas related to different types of food</li> </ol>				
<b>Unit: I</b>	<b>Introduction to Food Science</b>	18 Hrs		
Food Science definition, scope of studying food science; Classification of Foods -Basic five food groups; Food Pyramid and Balanced diet. Cooking - Definition, objectives of cooking;Cooking Methods-Moist heat & Dry heat methods, advantages and disadvantages.				
<b>Unit: II</b>	<b>Cereals, Pulses and Millets</b>	18 Hrs		
Composition and nutritive value of cereals; Structure of wheat and Rice, Fermented and unfermented products. Millets, Role of cereals in cookery. Composition and nutritive value ofpulses, Classification, Pulse products, role of pulses in cookery.				
<b>Unit: III</b>	<b>Nuts-Oilseeds and Spices</b>	18 Hrs		
Nuts and Oil seeds. Types of fats and oils, Hydrogenation, role of fat in cookery, effect of heating, factors affecting absorption of fats, smoking point Rancidity-Types, Prevention. Spices: Functions, role of spices in cookery, Types, Nutritive value, Uses and abuses. Nuts & Oil seeds:Types, Composition Nutritive value, role of nuts and oil seeds in cookery.				
<b>Unit: IV</b>	<b>Vegetables and Fruits</b>	18 Hrs		
Classifications of fruits and vegetables, Concept of maturity, ripening, changes during ripening, post-harvest changes in fruits, vegetables - maturation, changes in maturation, pigments in fruits & vegetables, Role of fruits and vegetables in cookery.				
<b>Unit: V</b>	<b>Meat, Fish and Egg</b>	18 Hrs		
Structure of egg, uses of egg in cookery, structure of meat, types of meat, post - mortem changes in meat, methods of cooking meat, classification of poultry, processing of poultry, selection of fish, methods of preservation of fish.				

	<b>Total Lecture Hours</b>	<b>90 Hrs</b>
<p><b>List of Practical</b></p> <ol style="list-style-type: none"> <li>1. Use of standard measuring cups and spoons.</li> <li>2. Cooking of different recipes from Millets, Cereals, Pulses, Vegetables, Fruits, Egg &amp; Fish.</li> <li>3. Cooking of foods by using water or steam as medium – Boiling &amp; pressurecooking.</li> <li>4. Cooking of foods by using microwave.</li> <li>5. Effect of cooking on cereal cookery and pulses cookery.</li> <li>6. Preparation of sprouted legumes and malt powder.</li> <li>7. Preparation of nuts based dishes.</li> <li>8. Effect of cooking on vegetables – steam , acid , alkali.</li> <li>9. Evaluation of meat quality.</li> <li>10. Evaluation of egg quality.</li> </ol>		
<b>Books for Study:</b>		
1. Srilakshmi, B, <b>Food Science</b> , New Age International Private Limited Publishers, New Delhi; (2018).		
<b>Books for References:</b>		
<ol style="list-style-type: none"> <li>1. Mudambi, R.S. and Rajagopal, M.Y. <b>Fundamentals of Food and Nutrition</b>, Wiley Eastern Limited: New Delhi (1991).</li> <li>2. Swaminathan, M., <b>Food Science and Experimental Foods</b>, Ganesh and Company, Madras (1988).</li> <li>3. Mudambi, R.S. and Rao, S, <b>Food Science</b>, Wiley Eastern Limited, New Delhi (1987).</li> <li>4. Potter, N.M. and Birch, G.G., <b>Food Science</b>, AVI, West Port: Conn (1986).</li> <li>5. Bennion, et.al., <b>Introductory Foods</b>, Macmillan, New York (1985).</li> </ol>		
<b>Web Resources:</b>		
<a href="http://lib.rudn.ru/file/Food_Science_Nutrition_Catalogue_ebook.pdf">http://lib.rudn.ru/file/Food_Science_Nutrition_Catalogue_ebook.pdf</a>		
<b>Course Outcomes</b>		
<b>On Successful Completion of Course the Student will able to,</b>		
<b>CO1:</b>	Identify the science behind the food products.	
<b>CO2:</b>	Explain various foods and their composition.	
<b>CO3:</b>	Apply various methods of cooking.	
<b>CO4:</b>	Analyze the role of difference foods in cookery.	
<b>CO5:</b>	Discover various new food products.	

**LESSON PLAN**

Unit	Course Name	Hrs	Pedagogy
I	<b>Introduction to Food Science:</b> Food Science definition, scope of studying food science; Basic five food groups; Food Pyramid and Balanced diet; Cooking–Definition, objectives of cooking; Cooking methods - Moist heat & Dry heat methods, advantages, and disadvantages.	18	PPT, Chalk & Talk, Laboratory
II	<b>Cereals , Pulses and Millets:</b> Composition and nutritive value of cereals; Structure of wheat and Rice, Fermented and Unfermented Products, Millets, Role of Cereals in cookery. Composition and Nutritive value of pulses, Classification, Pulse products, role of pulses in cookery;	18	PPT, Chalk & Talk, Laboratory
III	<b>Nuts-Oilseeds and spices:</b> Nuts and Oil seeds. Types of fats and oils, Hydrogenation, role of fat in cookery, effect of heating, factors affecting absorption of fats, smoking point Rancidity-Types, Prevention. Spices: Functions, role of spices in cookery, Types, Nutritive value, Uses and abuses. Nuts & Oilseeds: Types, Composition Nutritive value, role of nuts and oil seeds in cookery.	18	PPT, Chalk & Talk, Laboratory
IV	<b>Vegetables and Fruits:</b> Classifications of fruits and vegetables, Concept of maturity, ripening, changes during ripening, post-harvest changes in fruits, vegetables - maturation, changes in maturation, pigments in fruits & vegetables, Role of fruits and vegetables in cookery.	18	PPT, Chalk & Talk, Laboratory
V	<b>Meat, Fish and Egg:</b> Structure of egg, uses of egg in cookery, structure of meat, types of meat, pos- mortem changes in meat, methods of cooking meat, classification of poultry, processing of poultry, selection of fish, methods of preservation offish.	18	PPT, Chalk & Talk, Laboratory



**MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)  
COMMUNITY COLLEGE  
DIPLOMA IN FOOD PROCESSING AND QUALITY MANAGEMENT  
(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>FOOD QUALITY CONTROL AND MANAGEMENT LAB</b>			
<b>Course Code</b>	<b>23DFQSP2</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>Skill component</b>	<b>2</b>	<b>4</b>	<b>6</b>
<b>COURSE OBJECTIVES:</b>				
1. To Development the knowledge regarding accounting of principle of sampling 2. To inculcate skills in preparing sensory evaluation in different food 3. To assimilate the system of accounting followed in total plate count 4. To accumulate knowledge on nutrient in milk 5. To know the accounting skills required for SWAB analysis				
<b>UNIT: I</b>	<b>Introduction to quality control</b>	<b>18 Hrs</b>		
General concepts of quality and quality control– Major quality control functions– Sampling of food–Sample selection				
<b>UNIT: II</b>	<b>Food Adulteration</b>	<b>18 Hrs</b>		
Definition, Adulterants –Classification of adulterants– Harmful effects of adulterants–Methods of detection of adulterants				
<b>UNIT: III</b>	<b>Standard tests for quality assessment</b>	<b>18 Hrs</b>		
Physical test–Chemical tests–Microbiological test–Sensory analysis.				
<b>UNIT: IV</b>	<b>National food legislation</b>	<b>18 Hrs</b>		
Essential commodities Act – Standard of weight and measures Act – Export act – BIS,- Agmark-FSSAI - FPO Concept and application of ISO and HACCP.				
<b>UNIT: V</b>	<b>Overview of food spoilage</b>	<b>18 Hrs</b>		
Bacterial and fungal food spoilage– Food poisoning–Food born infection–Milk spoilage–Preventions of milk and milk products spoilage.				
			<b>Total Lecture Hours</b>	<b>90 Hrs</b>
<b>LIST OF PRACTICALS:</b>				

- Sampling of food
- Adulteration of milk
- Adulteration of milk products
- Determination of fat content of milk
- Determination of protein in milk
- Sensory evaluation of food products
- Determination of Total plate count
- Determination of Hygiene–SWAB methods and effectiveness of cleaning
- Sensory evaluation of food products

**Books for Study:**

1. David. A. Shapton, Naroh. F. Shapton, Principles and Practises for the Safe Processing of Foods, Butterworth–Heineman Ltd, Oxford. OX 2 8 Dp,London 1991.

**Books for References:**

1. Manay, S. and Shadaksharamasamy, Food: Facts and Principles. New Delhi 2005
2. Sara mora more Carol wallaPPce, HACCP. A Practical Approach Chapman and Hall,Maryland 1997.
3. Potter, N. Food Science, CBS Publishes & Distributes. New Delhi ,1996.
4. Rekha.S. Singhtal, Pushpa, R. Gulgarni, Hand book of indices of food quality and authenticity. England FSSAI Act–2006 & 2011

**Web Resources:**

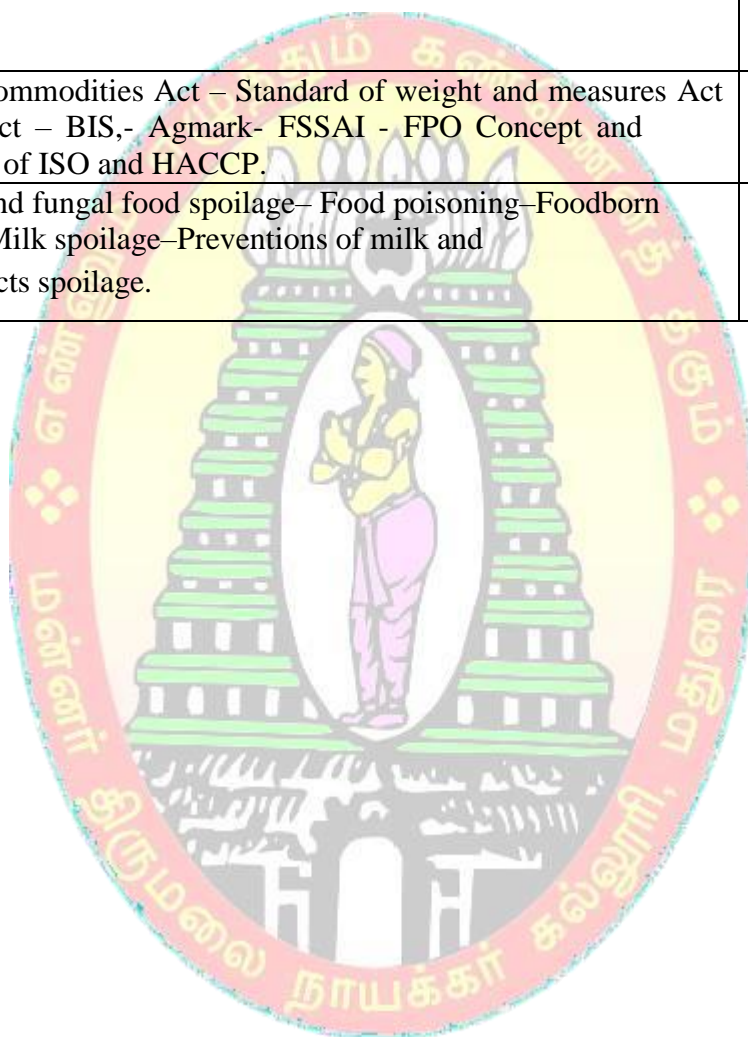
1. <https://ncert.nic.in/textbook/pdf/jehp109.pdf>

**COURSE OUTCOME**

<b>CO1:</b>	To enable the students to gain knowledge on sampling
<b>CO2:</b>	To apply the accounts for adulteration in milk
<b>CO3:</b>	To provide knowledge in nutrient in milk.
<b>CO4:</b>	To apply the accounts for sensory evaluation of food.
<b>CO5:</b>	To prepare the accounts of SWAP analysis

**LESSON PLAN**

UNIT	FOOD QUALITY CONTROL AND MANAGEMENT LAB	Hrs	Mode
I.	General concepts of quality and quality control– Major quality control functions– Sampling of food–Sample selection and sampling	18	PPT, Chalk & Talk, Laboratory
II.	Definition, Adulterants –Classification of adulterants– Harmful effects of adulterants–Methods of detection of adulterants	18	PPT, Chalk & Talk, Laboratory
III.	Physical test–Chemical tests–Microbiological test–Sensory analysis.	18	PPT, Chalk & Talk, Laboratory
IV.	Essential commodities Act – Standard of weight and measures Act – Export act – BIS,- Agmark- FSSAI - FPO Concept and application of ISO and HACCP.	18	PPT, Chalk & Talk, Laboratory
V.	Bacterial and fungal food spoilage– Food poisoning–Foodborn infection–Milk spoilage–Preventions of milk and milk products spoilage.	18	PPT, Chalk & Talk, Laboratory





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<b>Course Name</b>	<b>MILK AND MILK PRODUCT LAB</b>			
<b>Course Code</b>	<b>23DFQSP3</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>Skill component</b>	<b>2</b>	<b>4</b>	<b>6</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>1. To understand the processing methods of milk</li> <li>2. To acquire knowledge on milk products processing.</li> <li>3. To study the method of manufacturing of various milk products.</li> <li>4. To interpret processing methods of milk products.</li> <li>5. Analyze the effect of nutritional value of milk.</li> </ol>				
<b>UNIT: I</b>	<b>Dairy Development</b>			<b>18 Hrs</b>
Dairy Development in India-Operation flood– Importance of dairy industry– Opportunities of employment in the Dairy industry				
<b>UNIT: II</b>	<b>Composition of milk</b>			<b>18 Hrs</b>
Definition of milk– composition of milk-Physio chemical properties of milk–Collection of raw milk–Method of sampling of raw milk.				
<b>UNIT: III</b>	<b>Platform test</b>			<b>18 Hrs</b>
Quality of raw milk–Adulteration of milk–Principle and methods of milk processing– FSSAI standards of milk and milk products.				
<b>UNIT: IV</b>	<b>Market milk</b>			<b>18 Hrs</b>
Standards– Reconstituted milk–Condensed milk–Flavoured milk–UHT milk				
<b>UNIT: V</b>	<b>Cleaning in Place</b>			<b>18 Hrs</b>
Definition of CIP–Advantages of CIP–Washing–Sanitizer–Types of detergents– Characteristics of detergents–Factor affecting washing.				
(60% of marks must be allotted to practical questions. 40% of marks must be allotted to Theory questions).				
<b>LIST OF PRACTICALS</b>				
<ol style="list-style-type: none"> <li>1.Organoleptic Test</li> <li>2.Acidity test</li> <li>3.Phosphatase Test</li> <li>4.Alcohol test</li> </ol>				

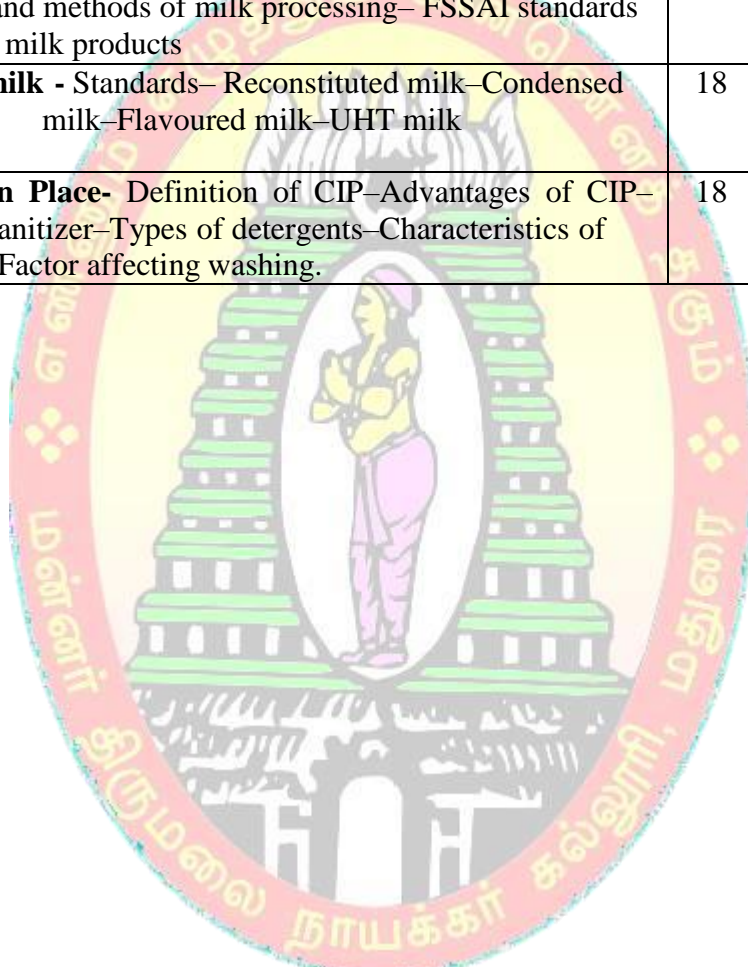


<p>5.COB test 6.MBRT 7.Estimation of starch in milk 8.Estimation of fat in milk 9.Estimation of carbohydrate in milk 10.Visit to dairy unit</p>		
		<b>Total Lecture Hours</b>
		<b>90 Hrs</b>
<b>Books for Study:</b>		
1.Sukumar De, Outlines of Dairy Technology, Oxford University Press, 1980,New Delhi.		
<b>Books for References:</b>		
1.Aneja.R.P, B.NMathur, R.C Chandra and A.K. Banerjee, Technology of Indian Milk andMilk Products, Dairy India Publication 2002,New Delhi. 2.H. Douglas Goff, “The Dairy Science and Technology eBook” Dairy Science andTechnology Education Series, University of Guelph, Canada. 3.Robinson, R. Advances in Milk Processing-Springer publication		
<b>Web Resources:</b>		
1. <a href="https://www.agricultureinindia.net/dairy-science/milk/physico-chemical-properties-of-milk-and-milk-constituents/20025">https://www.agricultureinindia.net/dairy-science/milk/physico-chemical-properties-of-milk-and-milk-constituents/20025</a>		
2. <a href="http://ecoursesonline.iasri.res.in/mod/page/view.php?id=147892">http://ecoursesonline.iasri.res.in/mod/page/view.php?id=147892</a>		
3. <a href="https://www.youtube.com/watch?v=1-m4NPcpgwO">https://www.youtube.com/watch?v=1-m4NPcpgwO</a>		
4. <a href="https://books.lib.uoguelph.ca/dairyscienceandtechnologvebook/chapter/physical-properties-of-milk">https://books.lib.uoguelph.ca/dairyscienceandtechnologvebook/chapter/physical-properties-of-milk</a>		
5. <a href="https://www.scribd.com/document/313319766/Dairy-products-Technology-Practical-Manual-Txt-Book-XII">https://www.scribd.com/document/313319766/Dairy-products-Technology-Practical-Manual-Txt-Book-XII</a>		
<b>Books for Study:</b>		
1.Sukumar De, Outlines of Dairy Technology, Oxford University Press, 1980,New Delhi.		
<b>Books for References:</b>		
1.Aneja.R.P, B.NMathur, R.C Chandra and A.K. Banerjee, Technology of Indian Milk andMilk Products, Dairy India Publication 2002,New Delhi. 2.H. Douglas Goff, “The Dairy Science and Technology eBook” Dairy Science andTechnology Education Series, University of Guelph, Canada. 3.Robinson, R. Advances in Milk Processing-Springer publication		
<b>COURSE OUTCOME</b>		
<b>CO1:</b>	Remember the different methods of preparation.	
<b>CO2:</b>	Understand the technologies to estimate different types of fat rich products..	
<b>CO3:</b>	Apply different methods of technologies.	
<b>CO4:</b>	Analyze skills in handling appliances in laboratories.	

**CO5:** Examine the product quality with reference to standard specifications.

**LESSON PLAN**

Unit	Course Name	Hrs	Pedagogy
I	<b>Dairy Development-</b> Dairy Development in India-Operation flood– Importance of dairy industry– Opportunities of employment in the Dairy industry.	18	PPT, Chalk & Talk, Laboratory
II	<b>Composition of milk -</b> Definition of milk– composition of milk-Physio chemical properties of milk–Collection of raw milk–Method of sampling of raw milk.	18	PPT, Chalk & Talk, Laboratory
III	<b>Platform test -</b> Quality of raw milk–Adulteration of milk– Principle and methods of milk processing– FSSAI standards of milk and milk products	18	PPT, Chalk & Talk, Laboratory
IV	<b>Market milk -</b> Standards– Reconstituted milk–Condensed milk–Flavoured milk–UHT milk	18	PPT, Chalk & Talk, Laboratory
V	<b>Cleaning in Place-</b> Definition of CIP–Advantages of CIP– Washing–Sanitizer–Types of detergents–Characteristics of detergents–Factor affecting washing.	18	PPT, Chalk & Talk, Laboratory





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ALL DIPLOMA COURSES  
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<b>Course Name</b>	<b>SMALL BUSINESS MANAGEMENT</b>			
<b>Course Code</b>	<b>23DBAG21</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>General Education</b>	<b>4</b>	<b>-</b>	<b>4</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>1. To familiarize the concept of Small business.</li> <li>2. To discuss sources of finance steps to start industrial Units.</li> <li>3. To know the various institutions assisting finance.</li> <li>4. To create more employment opportunities.</li> <li>5. Decision support information that improves decisions such as a report.</li> </ol>				
<b>UNIT: I</b>	<b>BASICS OF SMALL BUSINESS ENTERPRISE</b>			<b>14 Hrs</b>
Small Business – Definition – Features – Role of Small Business in Economic Development – Reasons for Establishing Small Business – Quality of Small Businessmen – Advantages and Disadvantages of Small Business – Reasons for Failures of Small Business – Characteristics of Successful Small Businessmen – Different Stages of Small business – Steps in Setting up a Small Business – Relationships between Small and Large Units – Small Sector in India .				
<b>UNIT: II</b>	<b>DYNAMICS OF SMALL BUSINESS</b>			<b>14 Hrs</b>
Concepts and Definitions of Small Scale Industries (SSIs) – Role of SSIs – Government Policy and Development of SSIs – Growth and Performance – SSI Sector and Committee Report – Reservation of items for SSI – Problems of SSI – Sickness of SSI: Causes, Symptoms and Cures – Prospects of SSI in free Economy.				
<b>UNIT: III</b>	<b>INSTITUTIONS SUPPORTING SMALL BUSINESS</b>			<b>12 Hrs</b>
Central, State and Other Institutional Support for SSI – Technological Upgradation and Institutional facility for SSI – Incentives and Subsidies for SSI.				
<b>UNIT: IV</b>	<b>ESTABLISHING OF MICRO, SMALL AND MEDIUM ENTERPRISES</b>			<b>10 Hrs</b>
MSME - Steps in Enterprise Building: Finding out New Business Idea – Identifying a Suitable Business Opportunity – Preliminary Evaluation.				

<b>UNIT: V</b>	<b>GROWTH STRATEGIES FOR SMALL BUSINESS</b>	10 Hrs
Need for growth –Types of growth strategies –Expansion –Diversification –Sub-contracting – stages of growth.		
		<b>Total Lecture Hours</b>
		<b>60</b>
<b>Books for Study:</b>		
1. Dr. Gupta. C.B and Dr. S.S. Khanka., Entrepreneurship and Small Business Management, New Delhi, 2019		
<b>Books for References:</b>		
1. Dr. P.T. Vijayshree & Dr. M. Alagammai, Entrepreneurship & Small Business Management, Margham Publications, Chennai, 2016.		
2. Vasant Desai, Fundamentals of Entrepreneurship and Small Business Management, Himalaya Publishing House, 2010.		
<b>COURSE OUTCOME</b>		
<b>CO1:</b>	Gain knowledge in the concept of small business management	
<b>CO2:</b>	Understand the procedure to start the new venture	
<b>CO3:</b>	Know the various institutions assisting	
<b>CO4:</b>	Facilitates to identify new ideas and ventures	
<b>CO5:</b>	To develop the Employability skill.	

**LESSON PLAN**

<b>UNIT</b>	<b>SMALL BUSINESS MANAGEMENT</b>	<b>Hrs</b>	<b>Mode</b>
I	Introduction to small business	14	PPT, Group Discussion, Seminar, Quiz, Assignment and Activity
II	Dynamics of small business	14	
III	Institutional support to small scale industries	12	
IV	Establishing of micro, small and medium enterprises	10	
V	Growth strategies for small business	10	



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COMMUNITY COLLEGE  
DIPLOMA IN FOOD PROCESSING AND QUALITY MANAGEMENT  
(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>FOOD PRESERVATION</b>			
<b>Course Code</b>	<b>23DFQG21</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>General Education</b>	<b>4</b>	<b>-</b>	<b>4</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>To know about the importance of fruits and vegetables</li> <li>To study about the processing of fruits and vegetables.</li> <li>To impart knowledge about the various products</li> <li>To know about the technology of fruits and vegetables</li> <li>To Gain ideas related to different types of food</li> </ol>				
<b>UNIT: I</b>	<b>Introduction to food preservation</b>			<b>12 Hrs</b>
Concept, importance of food preservation–Principles of preservation –Preservation technique.				
<b>UNIT: II</b>	<b>Preservation by drying</b>			<b>12 Hrs</b>
Concept, history–Types of drying and dryers–Treatments prior to drying.				
<b>UNIT: III</b>	<b>Preservation by use of high temperature</b>			<b>12 Hrs</b>
Concept and importance–Various methods used–pasteurization, boiling, canning– effect of high temperature on food.				
<b>UNIT: IV</b>	<b>Preservation by low temperature</b>			<b>12 Hrs</b>
Concept, history–types of preservation methods by low temperature–different Equipment used for preservation by low temperature–treatment prior to freezing. Storage of various food products.				
<b>UNIT: V</b>	<b>Fruit beverages</b>			<b>12 Hrs</b>
Squashes, syrups, nectars, ready to serve (RTS), crushes, cordial etc. Technology of carbonated soft drinks.				
				<b>Total Lecture Hours</b>
				<b>60 Hrs</b>
<b>Books for Study:</b>				

1. PrakashTriveni :Food Preservation, Aadi Publication, Delhi. 2010	
<b>Books for References:</b>	
1. M. ShafiurRahman :Hand Book of Food Preservation, Marcel Dekker Inc, New york.2007.	
2. McWillims and Paine :Modern Food Preservation, Surjeet Publication.1977.	
<b>Web Resources:</b>	
1. <a href="http://lib.rudn.ru/file/Food_Science_Nutrition_Catalogue_ebook.pdf">http://lib.rudn.ru/file/Food_Science_Nutrition_Catalogue_ebook.pdf</a>	
<b>COURSE OUTCOME</b>	
<b>CO1:</b>	Identify the science behind the food products
<b>CO2:</b>	Explain various methods of food preservation
<b>CO3:</b>	Apply various methods of preparation and preservation
<b>CO4:</b>	Analyze the role of different foods in processing
<b>CO5:</b>	Discover various new food products

**LESSON PLAN**

UNIT	FOOD PRESERVATION	Hrs	Mode
I	Concept, importance of food preservation–Principles of preservation –Preservation technique.	12	Chalk & Talk, PPT
II	Concept, history–Types of drying and dryers–Treatments prior to drying.	12	
III	Concept and importance–Various methods used–pasteurization, boiling, canning–effect of high temperature on food.	12	
IV	Concept, history–types of preservation methods by low temperature–different equipment's used for preservation by low temperature–treatment prior to freezing. Storage of various food products.	12	
V	Squashes, syrups, nectars, ready to serve (RTS), crushes, cordial etc. Technology of carbonated soft drinks. Carbonation of soft drink.	12	



**MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)**  
**ALL DIPLOMA COURSES**  
**DIPLOMA IN FOOD PROCESSING AND QUALITY MANAGEMENT**  
**(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>MULTIMEDIA LAB</b>			
<b>Course Code</b>	<b>23DCSGP2</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>General Education</b>	-	<b>4</b>	<b>4</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>To learn the basics and Fundamentals of Multimedia animation.</li> <li>To introduce Multimedia components and Tools.</li> <li>To understand how Multimedia can be incorporated in real life.</li> <li>To develop various video and text applications.</li> <li>To Design and develop various Multimedia Systems applicable in real time.</li> </ol>				
<b>LIST OF PRACTICALS</b>				<b>Hours</b>
<b>Flash Lab Programs:</b> <ol style="list-style-type: none"> <li>Moving a Ball using flash.</li> <li>Bouncing a Ball using flash.</li> <li>Moving a Car using flash.</li> <li>Animating a Star using flash.</li> <li>Frame by Frame Animation using flash.</li> <li>Text masking using flash.</li> <li>Photo masking using flash.</li> <li>Write a program to find Arithmetic Value in Flash.</li> <li>Write a program to find Fibonacci Series in Flash.</li> <li>Write a program to find Factorial in Flash.</li> </ol> <b>Photoshop Lab Program:</b> <ol style="list-style-type: none"> <li>Design Birthday card using Photoshop.</li> <li>Convert Picture into Text Background image.</li> <li>Creating Brush tool and using a Jelly Beans</li> <li>Clone the image using Photoshop.</li> <li>Pass port size photo using Photoshop.</li> </ol>				<b>60</b>
<b>Total Lecture Hours</b>				<b>60 Hrs</b>
<b>Books for Study:</b>				
1. M. Mahalakshmi, <b>Multimedia</b> , Margham Publications (2019)				
<b>Books for References:</b>				
1. Practical Photoshop CS6, Level 1 by Barbara Zukin Heiman, Donald Laird, Corrine Haverinen, Windsor Green, & Marilyn P. Kelly Practical Photoshop.				

2. Project Flash MX by Nat Gertler, Thomson Delmar Learning Publication.	
<b>COURSE OUTCOME</b>	
<b>CO1:</b>	Perform the operations of various multimedia techniques
<b>CO2:</b>	Ability to know about techniques of image processing
<b>CO3:</b>	Understand the various designing process in multimedia animation
<b>CO4:</b>	Develop an interactive multimedia presentation by using multimedia devices
<b>CO5:</b>	Identify practical aspects in designing latest multimedia applications

**LESSON PLAN**

LIST OF PRACTICALS	Hrs	Mode
<p><b>Flash Lab Programs:</b></p> <ol style="list-style-type: none"> <li>1. Moving a Ball using flash.</li> <li>2. Bouncing a Ball using flash.</li> <li>3. Moving a Car using flash.</li> <li>4. Animating a Star using flash.</li> <li>5. Frame by Frame Animation using flash.</li> <li>6. Text masking using flash.</li> <li>7. Photo masking using flash.</li> <li>8. Write a program to find Arithmetic Value in Flash.</li> <li>9. Write a program to find Fibonacci Series in Flash.</li> <li>10. Write a program to find Factorial in Flash.</li> </ol> <p><b>Photoshop Lab Program:</b></p> <ol style="list-style-type: none"> <li>11. Design Birthday card using Photoshop.</li> <li>12. Convert Picture into Text Background image.</li> <li>13. Creating Brush tool and using a Jelly Beans</li> <li>14. Clone the image using Photoshop.</li> <li>15. Pass port size photo using Photoshop.</li> </ol>	60	<b>Lab demonstration</b>





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<b>Course Name</b>	<b>TECHNOLOGY OF DAIRY PRODUCTS LAB</b>			
<b>Course Code</b>	<b>23DFQSP4</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>Skill Component</b>	<b>2</b>	<b>4</b>	<b>6</b>
<b>COURSE OBJECTIVES:</b>				
<ol style="list-style-type: none"> <li>1. To prepare cream, butter and ice cream by using the appropriate machines.</li> <li>2. To analyze the various quality parameters of prepared dairy products.</li> <li>3. To acquire the knowledge on platform and organoleptic test.</li> <li>4. To create milk based new by Products.</li> <li>5. To study the method of manufacturing of various milk products.</li> </ol>				
<b>UNIT: I</b>	<b>Processing of milk</b>	18Hrs		
Pasteurization–Methods of Pasteurization–Homogenization–Sterilization–Factors affecting processed and homogenized milk.				
<b>UNIT: II</b>	<b>Cream</b>	18Hrs		
Definition–Composition–Different types of cream–Methods of preparation–Uses.				
<b>UNIT: III</b>	<b>Butter</b>	18Hrs		
Definition–Composition–Different methods of butter preparation– Nutritive Value of butter -Uses.				
<b>UNIT: IV</b>	<b>Ice Cream</b>	18Hrs		
Definition–Composition –Different methods of ice cream preparation–Factors affecting ice cream–Storage and uses.				
<b>UNIT: V</b>	<b>Milk Products</b>	18Hrs		
Dahi–Lassi–Buttermilk – Paneer–Khoa–Food and nutritive value.				
(60% of marks must be allotted to practical questions. 40% of marks must be allotted to Theory questions).				
<b>LIST OF PRACTICALS</b>				
<ol style="list-style-type: none"> <li>1. Preparation of Cream.</li> <li>2. Acidity of cream</li> <li>3. Estimation of fat in cream.</li> </ol>				

4. Preparation of butter.		
5. Preparation of Khoa		
6. Preparation of Lassi		
7. Preparation of Ghee from butter.		
8. Preparation of Ice cream.		
9. Preparation of Paneer.		
10. Dairy Plant Visit.		
	<b>Total Lecture Hours</b>	<b>90 Hrs</b>
<b>Books for Study:</b>		
1. Sukumar De, Outlines of Dairy Technology, Oxford University Press, 1980, New Delhi.		
<b>Books for References:</b>		
1. Aneja.R.P, B.N Mathur, R.C Chandra and A.K. Banerjee, Technology of Indian Milk and Milk Products, Dairy India Publication 2002, New Delhi.		
2. H. Douglas Goff, “The Dairy Science and Technology eBook” Dairy Science and Technology Education Series, University of Guelph, Canada.		
3. <b>Robinson</b> , R. Advances in Milk Processing-Springer publication		
<b>Web Resources:</b>		
1. <a href="https://www.scribd.com/document/313319766/Dairy-products-Technology-Practical-Manual-Txt-Book-XII">https://www.scribd.com/document/313319766/Dairy-products-Technology-Practical-Manual-Txt-Book-XII</a>		
<b>COURSE OUTCOME</b>		
<b>CO1:</b>	Remember the different methods of preparation .	
<b>CO2:</b>	Understand the technologies to estimate different types of fat rich products..	
<b>CO3:</b>	Apply different methods of technologies.	
<b>CO4:</b>	Analyze skills in handling appliances in laboratories.	
<b>CO5:</b>	Examine the product quality with reference to standard specifications.	

**LESSON PLAN**

Unit	Course Name	Hrs	Pedagogy
I	<b>Processing of milk-</b> Pasteurization–Methods of Pasteurization–Homogenization–Sterilization-Factors affecting processed and homogenized milk.	18	PPT, Chalk & Talk
II	<b>Cream-</b> Definition–Composition–Different types of cream–Methods of preparation–Uses.	18	PPT, Chalk &

			Talk
III	<b>Butter-</b> Definition–Composition–Different methods of butter preparation– Nutritive Value of butter -Uses.	18	PPT, Chalk & Talk
IV	<b>Ice Cream-</b> Definition–Composition –Different methods of ice cream preparation–Factors affecting ice cream–Storage and uses.	18	PPT, Chalk & Talk
V	<b>Milk Products-</b> Dahi–Lassi–Buttermilk – Paneer–Khoa–Food and nutritive value.	18	PPT, Chalk & Talk

**LESSON PLAN**

Unit	Course Name	Pedagogy
1	Preparation of Cream.	Laboratory
2	Acidity of cream	Laboratory
3	Preparation of curd.	Laboratory
4	Preparation of butter.	Laboratory
5	Preparation of Khoa	Laboratory
6	Preparation of Lassi	Laboratory
7	Preparation of Ghee from butter.	Laboratory
8	Preparation of Ice cream.	Laboratory
9	Preparation of Paneer.	Laboratory
10	Dairy Plant Visit.	Laboratory



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<b>Course Name</b>	<b>SKILL DEVELOPMENT IN FOOD PREPARATION LAB</b>			
<b>Course Code</b>	<b>23DFQSP5</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>Skill Component</b>	2	4	6
<b>COURSE OBJECTIVES:</b>				
1.To develop the basic food preparation. 2.To understand the principles of preservation in food preparation. 3.To develop entrepreneurial skills. 4.To accumulate knowledge on new product development 5.To know the accounting skills required for product development				
<b>UNIT: I</b>	<b>Food Microbiology</b>	18 Hrs		
Principles of Food Preservation, microorganisms associated with foods- bacteria, yeast and mold, Importance of bacteria, yeast and molds in foods.				
<b>UNIT: II</b>	<b>Food Preservation by Low temperature</b>	18 Hrs		
Freezing and Refrigeration :Introduction to refrigeration, cool storage and freezing, definition, principle of freezing				
<b>UNIT: III</b>	<b>Concepts of Fast Food</b>	18 Hrs		
Types- trends- general cooking methods of fast foods. Preparation of raw materials. Indian fast foods. South Indian and North Indian Vegetarian and non-vegetarian gravies.				
<b>UNIT: IV</b>	<b>Preparation and Methods of Cooking</b>	18 Hrs		
Preparation of Ingredients – Washing, peeling, scrapping, cutting of vegetables, method of mixing foods, methods of cooking foods.				
<b>UNIT: V</b>	<b>Basic Indian and Continental Cookery</b>	18 Hrs		
Condiments & Spices - Introduction to Indian Foods, Spices used in Indian Foods, Role of Spices in Indian Cookery.				
(60% of marks must be allotted to practical questions. 40% of marks must be allotted to Theory questions).				
<b>LIST OF PRACTICALS:</b>				
<ul style="list-style-type: none"> <li>• Health mix</li> <li>• Flavored milk</li> <li>• Vegetable cutlet</li> <li>• Mushroom soups</li> <li>• Sprouted grains salad</li> <li>• Preparation of idly powder</li> </ul>				

• Preparation of coconut barfi		
	<b>Total Lecture Hours</b>	<b>90 Hrs</b>
<b>Books for Study:</b>		
1. Aneja.R.P, B.N Mathur, R.C Chandra and A.K. Banerjee, <i>Technology of Indian Milk and Milk Products</i> , Dairy India Publication, New Delhi 2002.		
<b>Books for References:</b>		
1. Sukumar De, <i>Outlines of Dairy Technology</i> , Oxford University Press, New Delhi ,1980.		
2. Srilakshmi, B, <i>Food Science</i> , New Age International Private Limited Publishers, New Delhi; 1997.		
<b>Web Resources:</b>		
1. <a href="https://www.phytojournal.com/archives/2017/vol6issue5/PartU/6-5-136-150.pdf">https://www.phytojournal.com/archives/2017/vol6issue5/PartU/6-5-136-150.pdf</a>		
<b>COURSE OUTCOME</b>		
<b>CO1:</b>	To enable the students to gain knowledge on preservation	
<b>CO2:</b>	To apply the accounts for preparation of products	
<b>CO3:</b>	To provide knowledge in value addition	
<b>CO4:</b>	To apply the accounts for sensory evaluation of food.	
<b>CO5:</b>	To prepare the accounts of ready to eat foods	

**LESSON PLAN**

UNIT	SKILL DEVELOPMENT IN FOOD PREPARATION LAB	Hrs	Mode
I	Principles of Food Preservation, microorganisms associated with foods- bacteria, yeast and mold, Importance of bacteria, yeast and molds in foods.	18 Hrs	PPT, Group Discussion, Hand on training, Assignment and Activity
II	Freezing and Refrigeration :Introduction to refrigeration, cool storage and freezing, definition, principle of freezing	18 Hrs	
III	Types- trends- general cooking methods of fast foods. Preparation of raw materials. Indian fast foods. South Indian and North Indian Vegetarian and non-vegetarian gravies.	18 Hrs	
IV	Preparation of Ingredients – Washing, peeling, scrapping, cutting of Vegetables, method of mixing foods, methods of cooking foods.	18 Hrs	
V	Condiments & Spices - Introduction to Indian Foods, Spices used in Indian Foods, Role of Spices in Indian Cookery.	18 Hrs	



**MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)  
COMMUNITY COLLEGE  
DIPLOMA IN FOOD PROCESSING AND QUALITY MANAGEMENT  
(For those who joined in 2023-2024 and after)**

<b>Course Name</b>	<b>INTERNSHIP</b>			
<b>Course Code</b>	<b>23DFQS21</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Category</b>	<b>Skill Component</b>	<b>-</b>	<b>6</b>	<b>6</b>

**INTERNSHIP ASSESSMENT**

**External Evaluation (Industrial Partner)**

- Evaluation Form ( 60 marks)

Application of Knowledge	Care for Tools & Equipment	Economic use of Material	Safety Consciousness	Speed	Accuracy	Quality of Workmanship	Amount of Work	Number of Attempts	Attitude

**Rating Scale:** Excellent- 6; Very Good- 5; Good- 4; Fair- 3; Satisfactory -2; Poor-1.

**Internal Evaluation (Course Teacher)**

- Case Study/ Project (20 marks)
- Viva (20 marks)