

## GENERAL INFORMATION

1. Name of the Trade: **Food Beverages**
2. NCO Code No. **7415.90**
3. Duration : One year (Two semesters)
4. Power Norms : 6 kW
5. Space Norm: Lab Space – **96 Sq. m**  
Class Room Space - **30 Sq. m**
6. Entry Qualification: Passed 10<sup>th</sup> Class Examination with science and mathematics.
7. Unit Size(No. of students): 20
8. Instructor's/Trainer's Qualification:
  - (i) National Trade Certificate in Food Beverage trade with three years experience in relevant industry.
  - OR
  - (ii) Diploma in Food Technology with two years experience in relevant industry.
  - OR
  - (iii) Degree in Food Technology with one years experience in relevant industry.
9. Desirable Qualification Preference will be given to **Craft Instructor's Certificate (CIC)**
10. Job Profile
  - **Quality Analyst** in Food Beverage industry.
  - **Supervisor** in Beverages Industry.
  - **Packaging Supervisor** in Beverage industry.
  - **Skilled Worker** in Food MNC.
  - **Entrepreneur** in Beverage industry.

**Note:** At least one instructor must have Degree/Diploma in particular trade

# FOOD BEVERAGES

## SYLLABUS: FIRST SEMESTER

Weeks	Practical	Theory
1-3	<ul style="list-style-type: none"><li>• Study of the different food beverages available in the Market.</li></ul>	<b>Introduction to different food beverage</b> <ul style="list-style-type: none"><li>• Types of beverages.</li><li>• Need of particular beverage.</li><li>• Classification of food beverages.</li><li>• Raw materials used for beverages.</li><li>• PFA-standards for food beverages.</li><li>• Food additives used in different beverages.</li><li>• Quality of water for beverages.</li></ul>
4-6	<ul style="list-style-type: none"><li>• Operate all equipment safely.</li><li>• Identify and removal of faults in machines.</li></ul>	<b>Primary processing machinery:</b> <ul style="list-style-type: none"><li>• Principle and working of equipment used e.g., Juice extractor, pulper, fermenter, vinegar generator, crown corking machine, bottle filling machine, Soda water machine, basket press, filter press,</li><li>• Maintenance of machines safety</li></ul>
7-8	<ul style="list-style-type: none"><li>• Extraction of juice from different fruits.</li><li>• Preservation of fruits juices with addition of preservative.</li></ul>	<b>Juice Extractions :</b> <ul style="list-style-type: none"><li>• Principle and methods for fruits juice manufacture, machinery used in different fruits juice extraction</li><li>• Preparation process flow charts of juice extraction from various fruits.</li></ul> <b>Preservative :</b> <ul style="list-style-type: none"><li>• Definition of Preservatives.</li><li>• Types of preservatives commonly used in food industry.</li></ul> Limits of usage of preservatives
9-12	<ul style="list-style-type: none"><li>• Material calculation of Fruit Beverages as per FPO Specification.</li><li>• Preparation of common fruit beverages available in the region such as squashes, crushes, cordial, syrups, nectars, R.T.S. beverages.</li><li>• Determination of Acids in fruits beverages.</li><li>• Determination of TSS with Hand refractometer in fruit Beverage.</li></ul>	<b>Non Alcoholic Beverages (TEA COFFEE) :</b> <ul style="list-style-type: none"><li>• Type of non alcoholic beverage.</li><li>• Preparation process and latest development.</li><li>• Machinery and equipment for non alcoholic beverages.</li><li>• Process variable and their control.</li><li>• Nutritional and energy values</li></ul> <b>Fruit Beverages</b> <ul style="list-style-type: none"><li>• Introduction to different fruits juices.</li><li>• Raw materials used in fruit beverages, and their properties.</li><li>• Machinery involved in different fruits juice extraction.</li><li>• Principle and preparation methods of Ready-To-Serve (RTS), Squash, fruit juice, nectar, concentrate, syrup, cordial,</li><li>• Process of manufacture</li></ul>

		<ul style="list-style-type: none"> <li>Quality control in beverage industry. FPO standards for fruit beverages.</li> </ul>
13-14	<ul style="list-style-type: none"> <li>Preparation of various flavoured milk beverages.</li> <li>Packaging, labelling and storage of flavoured milk.</li> <li>Quality of Flavoured milk.</li> </ul>	<b>Flavoured milk Beverages :</b> <ul style="list-style-type: none"> <li>Raw materials used in flavoured milk beverages, and their properties.</li> <li>Nutritional and energy values.</li> <li>Process of manufacture</li> <li>Quality control</li> </ul>
15-16	<ul style="list-style-type: none"> <li>General purification techniques.</li> <li>Production of mineral water from mini water treatment plant.</li> <li>Quality of packaged water</li> </ul>	<b>Package drinking water :</b> <ul style="list-style-type: none"> <li>Principle and method for production of mineral water.</li> <li>Quality standard (BIS) of water. Different types of water.</li> </ul>
17-18	<ul style="list-style-type: none"> <li>Production of soda water.</li> <li>Packaging, labelling and storage of soda water</li> </ul>	<b>Soda water :</b> <ul style="list-style-type: none"> <li>Principle and Method of soda water production.</li> <li>Raw material used in soda water, and their properties.</li> <li>Quality standards for soda water.</li> </ul>
19-20	<ul style="list-style-type: none"> <li>Preparation of malt syrup, badam, pista, herbal, concentrates, rose syrup</li> </ul>	<b>Miscellaneous Beverage :</b> <ul style="list-style-type: none"> <li>Beverage from other materials, grains malt, vegetable (tomato), herbs &amp; medicinal plants</li> </ul>
21-22	<ul style="list-style-type: none"> <li>Practical demonstration of bottle filling machine.</li> </ul>	<ul style="list-style-type: none"> <li>Study of various types of containers like Glass, Tin-merits and demerits of each-scope for new types of containers/ packaging materials, such as plastic pouches, brick packs, tetra pack, PET bottle and cartons.</li> </ul>
23-25	Industrial Training in Food Beverage industry	
26	Revision/Examination	

<b>FOOD BEVERAGES</b>		
<b>SYLLABUS: SECOND SEMESTER</b>		
<b>Weeks</b>	<b>Theory</b>	<b>Practical</b>
1-2	<b>Food beverage</b> <ul style="list-style-type: none"> <li>• Importance of food beverages for entrepreneurship.</li> <li>• Scope of food beverages.</li> <li>• Beverages and its importance in modern life.</li> <li>• Industrial growth and development.</li> </ul>	<ul style="list-style-type: none"> <li>• Study of the different carbonated and non carbonated, alcoholic and non alcoholic, fermented and unfermented beverages available in the market</li> </ul>
3-7	<b>Synthetic soft drinks :</b> <ul style="list-style-type: none"> <li>• Study the role of ingredients used in production of soft drink.</li> <li>• Process of manufacture of soft drinks.</li> <li>• Quality of water for soft drinks.</li> <li>• Study the detail of various water treatment processes.</li> <li>• Food additives used in soft drinks.</li> <li>• Quality control in a soft drink manufacturing industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Selection of ingredients for soft drink production</li> <li>• Preparation of different soft drinks.</li> <li>• Packaging of the soft drinks (PET Bottling, canning)</li> <li>• Quality testing in soft drinks.</li> </ul>
13-18	<b>Alcoholic Beverages :</b> <ul style="list-style-type: none"> <li>• Commercial process details of manufacturing alcoholic beverages like whiskey, beer, wine, rum, brandy.</li> <li>• Role of ingredients used in production of various alcoholic beverages.</li> <li>• Nutritional and energy values of these products.</li> </ul>	<ul style="list-style-type: none"> <li>• Selection of ingredients for the production of whiskey, beer, wine, rum, brandy.</li> <li>• Demonstrations of beer, whiskey, wine, rum and brandy.</li> <li>• Quality testing in alcoholic beverages.</li> <li>• Packaging of the alcoholic beverages.</li> <li>• Industrial visit of alcoholic beverages industry.</li> </ul>
19-22	<ul style="list-style-type: none"> <li>• <b>Food regulations:</b> Overview of Food Safety and Standards Act, 2006 BIS, ISO-22000, Agmark, HACCP, International Food Standards</li> <li>• GMP. Importance of personal Hygiene, Cleaning &amp; Sanitary standards of dairy industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Application of HACCP and GMP in Food beverages industry.</li> <li>• Utilization of Food beverages industry wastes.</li> </ul>
23-25	Industrial Training in Alcoholic or carbonated beverage industry	
26	Revision/Examination	

<b>Equipment, Machine &amp; Tools</b>		
<b>Sl. No.</b>	<b>Item/ Specification</b>	<b>Quantity proposed for a batch of 20 trainees</b>
1	Oven : 5 KW,	1
2	Platform scale balance : 100 Kg Capacity,	1
3	Meat cutting knives : Heavy duty SS	As required
4	Seed germinator : Cabinet type, Different chambers, Temp and RH Controller	1
5	Vinegar generator : Chamber made of SS, with sparger and baffles	1
6	Fermenter : Bioreactor, SS, with sparger and baffles	1
7	Vegetable slicing machine	1
8	Automatic pouch machine / filler sealer machine	1
9	Pluping Machine for fruits and vegetables	1
10	Kettle	1
11	Fruit mill	1
12	Jel meter	1
13	Can body reformer	1
14	Can seamer	1
15	Exhaust box	1
16	Auto clave	1
17	Cup sealer	1
18	Steel scale : 12 “ standard steel	2
19	Steel tape : Scales 1 meter, and of 50 ft	2
20	Weight box : For balances	1
21	Cutting equipments : Different knives, Cutters for fruits /Vegetables	As required
22	Sinks : standard size	1
23	Hot plate : Electrical 2 KW	1
24	Pickle mixer : Rotatory type, Contact Parts of SS	1
25	Heat sealing machine : Hand / pedal operated	1
26	Tanks SS : 50 liters capacity, cylindrical with cap	1
27	Syrup tanks : 50, 100 lit capacity SS	01 each
28	Pressure Cooker : 5 Kg and 10 Kg SS	01 each

29	Liquid filling machine : For filling liquid in bottles, 200 ml, 500 ml, 1000 ml. Manual	01 each
30	SS filter : Sieve type cloth filter, hydraulic,	1
31	Sugar coating pan : SS, Revolving type with speed control,	1
32	Bottle opener : Heavy duty, Stainless Steel	4
33	Burette : 50 ml digital Automatic/ ordinary glass	2
34	Pipette : 5-50 ml capacities, glass	2
35	Improved stoves : Made of MS with proper safety Measures, Valves etc	2
36	Stainless steel / Aluminium pots : Different Capacities	As required
37	Wooden spoons : Different sizes	As required

- Raw material, Testing Chemicals and consumables are not included in the list.

A)	Furniture		
	<b>Class Room</b> <ul style="list-style-type: none"> <li>• Instructor Chair &amp; Table</li> <li>• Dual Desk</li> </ul>	: : :	01 No 10Nos.
	<b>Workshop/Lab</b> <ul style="list-style-type: none"> <li>• Suitable Worktables</li> <li>• Stools</li> <li>• Discussion Table</li> </ul>	: : :	06Nos. 20Nos. 01No.
	Tool Cabinet	:	01No.
	TraineesLockerwithspacefor20	:	01No.
	First Aid Box	:	01No.
	Book Shelf(glass panel)	:	01No.
	Storage rack	:	01No.

