

GOVERNMENT OF THE PUNJAB

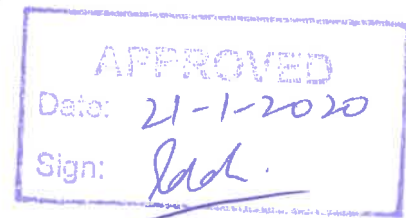
TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR
Diploma in Nutrition Sciences & Hygiene

(2 – Years Course)

Evaluated October 2019



CURRICULUM SECTION
ACADEMICS DEPARTMENT

96-H, GULBERG-II, LAHORE

Ph # 042-99263055-9, 99263064

gm.acad@tevta.gop.pk, manager.cur@tevta.gop.pk

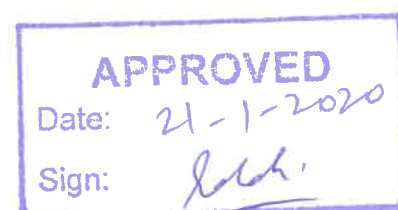
TRAINING OBJECTIVES

The Diploma in Nutrition Sciences & Hygiene has been designed to develop competent applicants with a strong foundation & understanding of basic nutrition, meal management, and the role of food in the body health and disease. It also emphasizes the scientific fundamentals of nutrition and metabolism throughout the lifecycle.

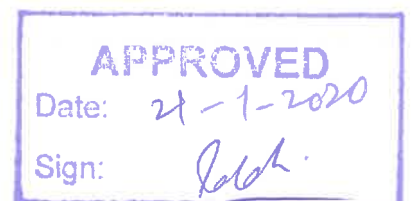
This course introduces students to the basics of Food safety & hygiene in reducing the risk of food poisoning and will decrease food wastage, positively impacting on profits. A combination of theory and practical, will keep learners competence up-to-date and lifelong learning in order to acquire opportunities at supervisory and managerial level. This course will help students to carry out routine quality control analysis of food to participate positively in rural development of the food industry through self-employment and to qualify for further education to Bachelors in Food and Nutrition Sciences/or Bachelors in Food Safety in other institutions of higher running and participate also in other man power development programmes.

CURRICULUM SALIENTS

Name of Course	Diploma in Nutrition Sciences & Hygiene
Entry level	Matric
Duration of Course	2 Years
Training Methodology	Theory 60% Practical 40%
Medium of Instruction:	English and Urdu



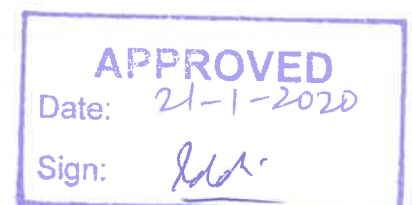
1st Year



SKILL PROFICIENCY DETAILS

On successful completion of this course, learners should be able to:

1. Demonstrate Reading, comprehension and vocabulary.
2. Apply the Concepts of Composition Writing to Practical Situations
3. Perform the operation of a computer & also learn Windows, Ms Office and word processing to elementary level.
4. Identify the classification of food & its role in human body
5. Identify the deficiency symptoms and health disorders associated with improper intake of vitamins and minerals.
6. Analyze losses of micronutrients during food processing.
7. Implement the good hygiene practices for the control of contamination hazards
8. Calculate Body mass Index (BMI) & Recommended Dietary Allowance (RDA)
9. Implement good hygiene practices at their workplace
10. Implement the food business's hygiene policies & procedures designed to protect food from contamination
11. Implement cleaning schedules & safe use & storage of cleaning chemicals
12. Report pest infestations to management



KNOWLEDGE PROFICIENCY DETAILS

On successful completion of this course, trainee should be able to:

1. Understand the significance and role of nutrition in human health
2. Understand basic knowledge of nutrition sciences and food hygiene
3. Understand the classification of food (carbohydrates, fats, proteins, vitamins water & minerals.
4. Understand the importance of Food Safety and hygiene in Food processing premises.
5. Understand recommended dietary allowance and requirements
6. Understand Nutrition disorders
7. Describe Food contamination Hazards, contamination & cross contamination
8. Describe food microbiology & food borne diseases
9. Understand the importance of Cleaning and sanitation
10. Understand Good hygiene practices & Good manufacturing practices
11. Understand pest management
12. Understand food safety management systems
13. Describe safe layout of food production area
14. Describe role of supervisor in food hygiene
15. Describe standards of food storage & stock rotation



SCHEME OF STUDIES


Diploma in Nutrition Sciences and Hygiene (2 – Years Course)

(1st Year)

S. No.	Main Topic	T	P	C
1	English (I)	2	0	2
2	Urdu (I)	2	0	2
3	Islamic Studies /Civics (For Non Muslim)	1	0	1
4	Introduction to Human Nutrition	2	6	4
5	Supervising Food Safety	1	3	2
6	Computer Fundamentals	1	3	2
7	Research Project* (I)	0	6	2
Total		9	18	15

***Note:**


- (1) 32 Hour for theory = 1 Credit = 50 marks
96 Hour for Practical = 1 Credit = 50 marks
- (2) Research Project-I will be completed during whole session & sessional marks will be awarded according to performance of the student.

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DETAIL OF COURSE CONTENTS
Diploma in Nutrition Sciences & Hygiene
(2-Year Course)

(1st Year)


S.No	Detail of Topics	Theory Hours	Practical Hours
1.	English (I) The detail course outline of the subject of English will be the same as of the Board of Intermediate and Secondary Education	64	0

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S.No	Detail of Topics	Theory Hours	Practical Hours
2.	Urdu (I) The detail course outline of the subject of Urdu will be the same as of the Board of Intermediate and Secondary Education	64	0

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S.No	Detail of Topics	Theory Hours	Practical Hours
3.	Islamic Studies/Civics for Non-Muslims The detail course outline of the subject of Islamic Studies will be the same as of the Board of Intermediate and Secondary Education	32	0

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5.	<p>Supervising Food safety</p> <p>5.1 Introduction to Food Safety</p> <p>5.2 Food Poisoning</p> <p>5.3 Classification of Foods</p> <p>5.4 Introduction to Food Microbiology</p> <p>5.5 Destruction of Bacteria</p> <p>5.6 Contamination Hazards & Control</p> <p>5.7 Sources ,Vehicles & routes of Contamination</p> <p>5.8 Food Poisoning</p> <p>5.8.1 Most Common reasons of Food Poisoning</p> <p>5.8.2 Important Food Poisoning Bacteria</p> <p>5.8.3 Food poisoning outbreaks</p> <p>5.8.4 Chemical & Metallic Food Poisoning</p> <p>5.8.5 Personal Hygiene</p> <p>5.8.6 Cuts, Boils, Septic spots & skin infections</p> <p>5.8.7 Role of the supervisor in personal Hygiene</p> <p>5.8.8 Storage & temperature control of Food</p> <p>5.8.9 Food packaging</p> <p>5.10 Stock Rotation</p> <p>5.10.1 Temperature Monitoring</p> <p>5.10.2 Food Preparation</p> <p>5.10.3 Storage of frozen food</p> <p>5.10.4 Preparation of frozen food</p> <p>5.10.5 Food spoilage & Preservation</p> <p>5.10.6 Preservation by using High temperatures</p> <p>5.10.7 Different methods of preservation</p> <p>5.10.8 Design & construction of Food Premises</p> <p>5.10.9 Storage & disposal of waste</p> <p>5.11.0 Design & construction of equipment</p> <p>5.11.1 Construction materials</p> <p>5.11.2 Maintenance of premises & equipment</p>	32	96
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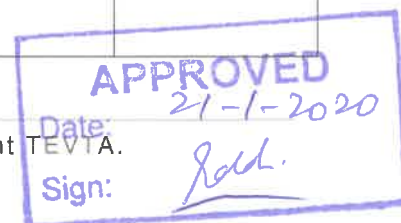
21-1-2020

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S.No	Detail of Topics	Theory Hours	Practical Hours
4.	<p>Introduction to Human Nutrition</p> <p>4.1 Introduction to Food, Nutrition</p> <p>4.2 Diet & Balanced Diet</p> <p>4.3 Food Groups</p> <p>4.4 Diet & Meal planning</p> <p>4.5 My Plate</p> <p>4.6 Food guide pyramid</p> <p>4.7 Dietary reference intake, Recommended Dietary Allowance</p> <p>4.8 Factors affecting Food intake & Choice</p> <p>4.9 Fat & water soluble vitamins, their sources proteins, lipids, carbohydrates, dietary fiber, vitamins, water, electrolytes, minerals and trace elements</p> <p>4.10 Nutrition Assessment & Diet related disease</p> <p>4.10.1 Digestion, absorption, Transport & Excretion of Nutrients</p> <p>4.10.2 Digestive system: gastrointestinal tract</p> <p>4.10.3 Digestive juices, secretions</p> <p>4.10.4 Digestion & absorption of specific types of Nutrients</p> <p>4.10.5 Carbohydrates & fiber, lipids, Proteins, vitamins & minerals</p> <p>4.10.6 Medical & Nutrition therapy for cardiovascular disease, Hypertension, Anemia, Diabetes Mellitus,</p> <p>4.10.7 Diet related diseases, Malnutrition, Dental caries, Lactose Intolerance, Overweight & obesity & its causes</p>	64	192



	<p>5.12 Cleaning & Disinfection</p> <p>5.12.1 Methods & procedures of cleaning</p> <p>5.12.2 Role of supervisor in Cleaning</p> <p>5.13 Pest Management</p> <p>5.13.1 Signs of Rodents & Insects Infestations</p> <p>5.13.2 Pest Controls</p> <p>5.14 Supervision of Food Safety</p> <p>5.14.1 Food safety Management systems</p> <p>5.14.2 Food safety legislation</p>		
6.	<p>Computer Fundamentals</p> <p>6.1 What is computer</p> <p>6.2 Disk Operating System</p> <p>6.3 Microsoft Windows XP</p> <p>6.4 Typing Lesson</p> <p>6.5 Microsoft Word</p> <p>6.6 Ribbons</p> <p>6.7 Short Cut Keys</p> <p>6.8 Spread Sheet: Ms-Excel</p> <p>6.9 MS Power Point (Presentation Software)</p> <p>6.10 Internet & Electronic Mail</p>	32	96
7.	<p>Research Project (I)</p> <p>7.1 Background And Justification For Selection Of The Topic</p> <p>7.1.1 Why this topic interests you?</p> <p>7.1.2 What is your academic background of choosing this topic and how you justify it?</p> <p>7.1.3 Which people will benefit from your research?</p> <p>7.1.4 Previous research related to your area of Investigation.</p> <p>7.2. Statement Of Objectives And Hypothesis To Be Examined</p> <p>7.2.1 Write your Research / Hypothesis</p>	0	192

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<p>Questions</p> <p>7.2.2 What are the objectives of your hypothesis?</p> <p>7.2.3 What are the limitations of your hypothesis Questions?</p> <p>7.3 Details Of Information/Data Collection Methods</p> <p>7.3.1 What are the types of your information/data Collection?</p> <p>7.3.2 Why the above types of information/data Collection is important in your research?</p> <p>7.4 Details Of Data Analysis Methods</p> <p>7.4.1 How you will analyze your data?</p> <p>7.5 Literature Review</p> <p>7.5.1 Critical review of Literature</p> <p>7.5.2 Theory on which studies based</p> <p>7.5.3 Identify problems, short-comings, or gaps in you research</p> <p>7.5.4 Future directions for research</p> <p>7.6 Timescale Of Completing The Thesis</p> <p>7.6.1 When will you decide your thesis title?</p> <p>7.6.2 When will you decide your thesis hypothesis?</p> <p>7.6.3 When will you get your data?</p> <p>7.6.4 When will you analyze your data?</p> <p>7.6.5 When you will write each Chapter of your Thesis?</p> <p>7.7 Budget</p> <p>7.7.1 How much this research will cost you?</p> <p>7.8 Findings and recommendations/ conclusion</p> <p>7.8.1 Briefly outline the recommendations and the conclusion from the data analysis</p>		
Total	288	576

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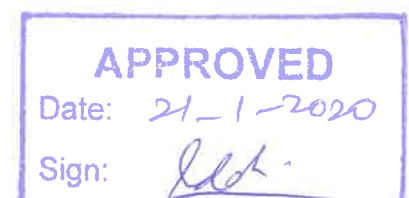
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Practical List

1st Year

1. Assess the nutritional status by weight and height of a person using (BMI)
2. Calculate Ideal Body weight (IBW)
3. Calculate the Total Energy Expenditure
4. Calculate Physical activity level (PAL)
5. Calculate Exchanges of different food groups i.e (starch, fruits, vegetable, milk , meat and fat)
6. Calculate calories per serving of food
7. Calculate Serving size of each food group
8. Examine Nutritional assessment of patients through historical information & anthropometric measurements
9. Prepare a Diet plan for a healthy and malnourished person
10. Perform Sensory Evaluation of Food
11. What are Personal protective Equipment's
12. Examine six stages of cleaning & disinfection of a food contact surface
13. Determine Mould growth at varying degree of moisture, light & temperature for the storage period of seven days
14. Explain bacterial morphologies with the help of diagrams
15. Observe the effects of organoleptic properties of white bread during storage
16. Identify allergens from different allergenic ingredients used in the industry



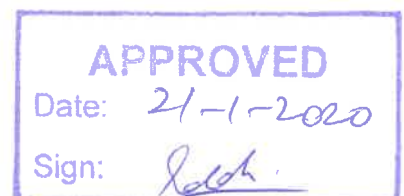
2nd Year

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SKILL PROFICIENCY DETAILS

On successful completion of this course, Learner should be able to:

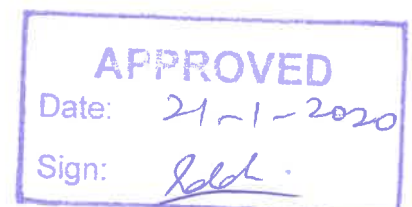
1. Identify the common allergens handled in the kitchen
2. Calculate calories & exchange in per serving of different foods
3. Prepare menus under different cost budgets.
4. Design food menus for different age groups
5. Perform the sensory evaluation of food
6. Identify the factors that influences in selecting a market



KNOWLEDGE PROFICIENCY DETAILS

On successful completion of this course, Learner should be able to:

1. Understand the relationship of Nutrition with other disciplines
2. Describe components of Food and their metabolism
3. Describe impact of different food & nutrients on human health
4. Understand how to prepare a diet plan
5. Identify the nutritional requirements according to different age groups i.e (infancy, childhood, adolescence, adult year & aging)
6. Understand the concept of farm to fork
7. Understand Food habits & Eating behaviors
8. Describe time & Energy management
9. Understand food & nutrition in health promotion & disease prevention



SCHEME OF STUDIES

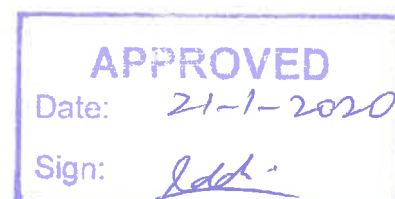
Diploma in Nutrition Sciences & Hygiene (2 – Years Course)

(2nd Year)

S. No	Main Topic	T	P	C
1	English (II)	2	0	2
2	Urdu (II)	2	0	2
3	Pak Study	1	0	1
4	Nutrition in the life cycle	1	3	2
5	Meal Management	2	6	4
6	Research Project (II)	0	6	2
Total		8	15	13

Note:


- (1) 32 Hour for Theory =1 Credit = 50 marks
96 Hour for Practical =1 Credit = 50 marks
- (2) Research Project-II will be a theory part whereas the Viva and Presentation of the Research Project will be a practical part.




DETAIL OF COURSE CONTENTS
Diploma in Nutrition Sciences & Hygiene
(2-Year Course)
Detail of Contents

(2nd Year)

S.No	Detail of Topics	Theory Hours	Practical Hours
1.	English (II) The detail course outline of the subject of English will be the same as of the Board of Intermediate and Secondary Education	64	0

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S.No	Detail of Topics	Theory Hours	Practical Hours
2.	Urdu (II) The detail course outline of the subject of Urdu will be the same as of the Board of Intermediate and Secondary Education	64	0

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S.No	Detail of Topics	Theory Hours	Practical Hours
3.	Pak Studies The detail course outline of the subject of Pak Studies will be the same as of the Board of Intermediate and Secondary Education	32	0

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S.No	Detail of Topics	Theory Hours	Practical Hours
4.	<p>Nutrition in the Life Cycle</p> <p>4.1 Nutrition in pregnancy and lactation Preconception & fertility, Conception, Pregnancy & lactation</p> <p>4.2 Nutrition in Infancy Physiologic development, Nutrient requirements, Providing an adequate diet, Milk, Food & feeding</p> <p>4.3 Nutrition in Childhood Growth & Development, Nutrient Requirements, Providing an adequate diet, Nutritional concerns & Preventing chronic diseases</p> <p>4.4 Nutrition in Adolescence Growth & development, nutrient requirements, Food habits & eating behaviors, Nutrition assessment, screening & counseling, special concerns</p> <p>4.5 Nutrition in the Adult years Nutrition in the Adult years, The wellness, Lifestyle & Health Risk factors, interventions Nutrition & Prevention, latest Food trends & patterns, Nutrition supplementation functional foods</p> <p>4.6 Nutrition in Aging The older Population, Nutrition in Health promotion & disease prevention, Common health problems, Quality of life, Nutrition screening & assessment, Nutrition needs, Nutrition support services & assisted living & skilled care facilities.</p>	32	96

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5.	Meal Management 5.1 Introduction to food Insights 5.2 Planning Meals 5.3 Nutrition in Meal Planning 5.4 Dietary Guidelines 5.5 National Variations 5.6 Dietary reference intake 5.7 Food Labeling 5.8 Food Allergen Alert 5.9 Integrating Nutrition into Menus 5.10 Menu Planning 5.11 Food selection 5.12 Kitchen & dining facilities 5.13 Structuring the Menu Plan 5.14 Refining Menu Plan 5.15 Food Buying 5.16 Factors in selecting a Market 5.17 Factors in Shopping decisions 5.18 Types of Markets 5.19 Time & Energy Management 5.20 Service & Hospitality 5.21 Setting the Table 5.22 Method of Meal service 5.23 Hospitality as a business 5.24 Special occasions	64	192
6.	Research Project (II) 6.1 Background And Justification For Selection Of The Topic 6.1.1 Why this topic interests you? 6.1.2 What is your academic background of choosing this topic and how you justify it? 6.1.3 Which people will benefit from your research?	0	192


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<p>6.1.4 Previous research related to your area of investigation.</p> <p>6.2. Statement Of Objectives And Hypothesis To Be Examined</p> <p>6.2.1 Write your Research / Hypothesis Questions</p> <p>6.2.2 What are the objectives of your hypothesis?</p> <p>6.2.3 What are the limitations of your hypothesis questions?</p> <p>6.3 Details Of Information/Data Collection Methods</p> <p>6.3.1 What are the types of your information/data collection?</p> <p>6.3.2 Why the above types of information/data collection are important in your research?</p> <p>6.4 Details Of Data Analysis Methods</p> <p>6.4.1 How you will analyse your data?</p> <p>6.5 Literature Review</p> <p>6.5.1 Critical review of Literature</p> <p>6.5.2 Theory on which studies based</p> <p>6.5.3 Identify problems, short-comings, or gaps in your research</p> <p>6.5.4 Future directions for research</p> <p>6.6 Timescale Of Completing The Thesis</p> <p>6.6.1 When will you decide your thesis title?</p> <p>6.6.2 When will you decide your thesis hypothesis?</p> <p>6.6.3 When will you get your data?</p> <p>6.6.4 When will you analyse your data?</p> <p>6.6.5 When you will write each Chapter of your thesis?</p> <p>6.7 Budget</p> <p>6.7.1 How much this research will cost you?</p>		
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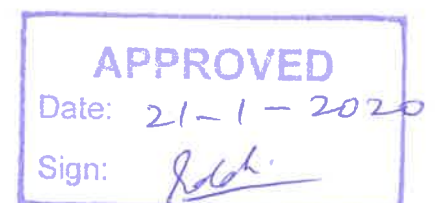
6.8 Findings and recommendations/ conclusion 6.8.1 Briefly outline the recommendations and the conclusion from the data analysis		
Total	256	480
Grand Total of 1st & 2nd Year	544	1056

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Practical List

2nd Year

1. Conduct a market survey for the procurement of quality raw materials by keeping in mind the retail and whole sale price being cost effective
2. Study the effect of cooking on weight, volume texture color & taste of assorted food items
3. Plan a menu under low, moderate & high budget
4. Prepare recipes for special occasions with different styles of service & table setting
5. Plan & perform informal styles of meal service
6. Calculate the calories & exchange per serving of a fruit salad
7. Calculate the calories & exchange per serving of different milk shakes
8. Calculate the calorie and exchange per serving of sandwiches
9. Plan/design food menus for different age groups as per nutritional value
10. Prepare a 4 course menu i.e.
 - Appetizer
 - Starter
 - Main Course
 - Dessert



LIST OF TOOLS AND EQUIPMENT
(FOR CLASS OF 25 Students)

Name of Trade	Diploma in Nutrition Sciences & Hygiene
Duration of Course	2-Years

S. No	Equipment & Utensils	Quantity/No.	Specs.
1.	Stoves	6	Commercial
2.	Fridge	2	Commercial
3.	Chiller	2	Commercial
4.	Blender Machine/Juicer	2	Commercial
5.	Cooking Curry Spoon	6	Commercial
6.	Mixing Bowls(Small)	6	Steel
7.	Mixing bowls(Medium)	6	Steel
8.	Measuring Cups	6	Glassware
9.	Digital Probe Thermometer	3	Commercial
10.	Color Coded Chopping Boards	25	Commercial
11.	Color coded knives	25	Commercial
12.	Peeler	25	
13.	Slicer	6	
14.	Whisk	6	
15.	Frying Pan	6	Medium
16.	Frying Pan	6	Large
17.	Sauce Pan	6	Medium
18.	Sauce Pan	6	Large
19.	Tongs	6	
20.	Silver Pot	6	Medium
21.	Silver Pot	6	Small
22.	Dinner plate	25	China ware
23.	Dessert Plate	25	China ware
24.	Woks(Iron)	6	Small


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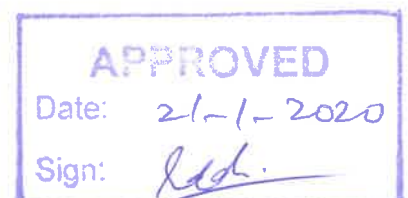
25.	Woks(Non Stick)	6	Medium
26.	Silver pot	6	Medium
27.	Table Spoon	25	
28.	Table Knife	25	
29.	Fork	25	
30.	Dessert Spoon	25	
31.	Dessert Knife	25	
32.	Milk Container-1/2 Litre	6	Glassware
33.	Oil Container-250ml	6	Glassware
34.	Potato Masher	6	
35.	Measuring Spoons	6	
36.	Cheese Grater	6	
37.	Equipment sharing counter with electron extension	2	
38.	Exhaust Hood		As per requirement
39.	Fire Extinguishers		As per requirement
40.	First aid Box		As per requirement

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EMPLOYABILITY OF PASS-OUTS

The pass outs of this course may find job / employment in the following areas/sectors:

1. HORECA
2. Hospitality Industry
3. Health & Safety
4. Travel & tourism
5. Non-Government Organizations
6. Multinational Companies
7. Food Industries
8. Pharmaceutical Industries
9. International Organizations

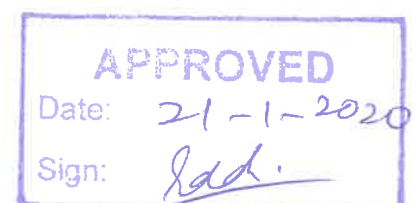


MINIMUM QUALIFICATION OF INSTRUCTOR

- M.Sc Degree in Food Science, Nutrition, Food science & Technology, Food science & Nutrition Food safety 1- Year experience in Teaching & training

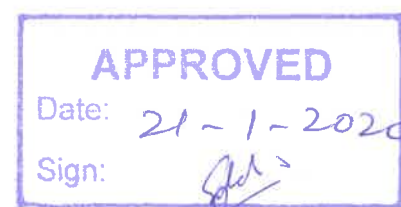
OR

- B.Sc (Hons) Degree in Food Science, Nutrition, Food science & Technology, Food science & Nutrition or Food safety 2-Years Of experience in Teaching & Training



REFERENCE BOOKS

S. No.	Name of Book	Author Name
1	Food Nutrition and Wellness	ROBERTA KARSON DUYFF
2	Encyclopedia of Human Nutrition	BENJAMIN CABALLERO LINDSAY ALLEN ANDREW PRENTICE
3	Nutrition Concepts and Controversies (13th Edition)	FRANCES SIENKIEWICZ SIZER ELLIE WHITNEY
4	Nutritional Sciences From Fundamentals to Food (2nd Edition)	MICHELLE MCGUIRE KATHY A.BEERMAN
5	Nutrition and You (2nd Edition)	JOAN SALGE BLAKE
6	Principles of Human Nutrition (2nd Edition)	MARTIN EASTWOOD
7	Krause's Food Nutrition Care Process	L.KATHLEEN MAHAN SYLVIA ESCOTT-STUMP JANICEL. RAYMOND
8	Elements of Food and Nutrition	AWAN, J.A
9	The Highfield Food safety handbook Level 2	Richard A. Sprenger
10	Supervising Food safety Level 3	Richard A. Sprenger
11	Fundamentals of Meal Management	Margaret Mc. Williams
12	Pure food Ordinance	
13	PFA Act	
14	GOP. 2011. Punjab Pure Food Rules 2011. Health Department, Government of the Punjab, Lahore, Pakistan.	



CURRICULUM EVALUATION COMMITTEE

- 1 **Mr. Naseem Raza Shahid** **Convener**
Visiting Lecturer,
Institute of Agri- Sciences,
University of Punjab,
Lahore.
- 2 **Ms. Marriam Ali** **Member**
Manager, Health & Food Safety
COTHM college,
Address: 5-C Main Gulberg,
Ayesha Saddiqa Road behind EFU building,
Jail Road, Lahore.
- 3 **Mr. Muhammad Mukhtar** **Member**
(Ex- Chief Instructor (Food- Tech.) GCT- Faisalabad)
Manager (HR)
TEVTA Secretariat,
Lahore
- 4 **Mr. Wasif Zubair,** **Member**
Instructor,
Govt. Institute of Emerging Tech.,
Kotlakhpat, Lahore
- 5 **Muhammad Jamil** **Coordinator**
Registrar,
COTHM College
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Ayesha Saddiqa Road behind EFU building,
Jail Road, Lahore.

