

**CURRICULUM**

**For**

# **Meat Technology Level-2**

**(Assistant Slaughterer / Helper)**



**National Vocational & Technical Training  
Commission Islamabad**

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|                               |                                                      |       |
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## **1. INTRODUCTION**

The agriculture sector is playing pivotal role to maintain the economy of the Pakistan where large number of individuals are directly or indirectly related to this sector to earn their livelihood. Amongst the agriculture, livestock and meat industry are the vital sectors that are providing quality food especially protein to the masses. Meat Industry is one of the largest employers in Pakistan, and demand for processed meat has shown tremendous increase due to busy life and increased awareness about meat safety and hygiene. Production of skilled human resources in the area of meat processing and preservation will help to create business opportunities as well as jobs at the local community levels alongside ensuring safe meat production for the consumers.

The present Federal Government has rightly recognized the immense potential of meat processing and preservation in Pakistan and is now taking steps to tap this potential to overcome the shortfalls in this sector. Pakistan's meat processing industry is broadly categorized into different sectors like Halal slaughtering and handling of carcass, poultry processing, seafood processing, meat production and frozen meat processing. The goal of this course is to provide students with a fundamental understanding of meat technology and to ensure that students are technically sound in practical and problem-solving approaches for entrepreneurial startups and/or jobs in the meat industry. Notably, students are stimulated to polish their entrepreneurial skills and explore new horizons of the meat processing industry.

Preservation of meat can be done by chilling, freezing, canning, fermentation, dehydration, smoking, by different chemical agents, and various non-thermal techniques. Production of a range of meat products using these preservation techniques and processes is adopted by the meat industries. In this context, the students will also develop an understanding of shelf life and nutritional consequences of meat preservation techniques.

This course will provide opportunity to the students to learn different methods to process and preserve various types of meat, sampling and handling techniques, GMPs, HACCP, different meat contaminations, meat quality control, quality assurance, meat storage, and meat shipping etc.

The main goal of this course on meat technology is to prepare a student as skilled personnel for efficient meat processing to increase the productivity with effective quality control and to preserve the environment while fulfilling consumer expectations.

To improve the quality and relevancy of this training program, National Vocational & Technical Training Commission via Qualification Development Committee (QDC) developed National Competency Standards Level 2 for Meat Technology. The learning outcomes through this curriculum provide enough grounds to enrich the meat industry with demand-driven trained personnel in line with the latest industrial needs. Furthermore, this curriculum can be implemented in different sectorial pathways with flexibility in both public and private sector institutes.

## **2. PURPOSE OF THE TRAINING PROGRAMME**

The purpose of this qualification is to give the trainee a thorough understanding of meat processing and preservation in meat industry with effective quality control and safety of the meat products. Meat processing and preservation are diversified methods and continuously subject to changes over time. It is therefore important to stress the need for a multidisciplinary approach to meet the challenges within this sector. Upon successful completion of this course the trainees should be able to:

- Explain the core elements of meat processing and preservation techniques
- Understand the chemistry underlying the properties and reactions of various meat components
- Understand basic principles behind analytical techniques associated with meat
- Be able to use the laboratory techniques common to basic and applied meat chemistry
- Understand the basic principles and practices of cleaning and sanitation in meat processing operations
- Apply the principles of meat science to control and assure the quality and safety of meat products
- Be aware of current topics of importance to the meat industry
- Work effectively with others; provide supervision in a variety of situations and can deal with individual and/or group conflict

### **3. Overall objectives of training course**

The primary objective of this training program is to provide the trainees with up-to-date knowledge and skills required by the meat processing sector in a comprehensive way to cope the challenges of the food industries. After qualifying the course at different levels (Level 2 – 5), the students will be able to get job in the meat handling and processing industries and be able to function as entrepreneurs. The contents of the course are specifically designed in such a way that it covers all the major sectors in meat industry hence, the students are sufficiently exposed to operational requirements of these sectors and are ready to perform their duties confidently.

The overall objectives of developing this qualification are to:

- Improve the overall quality of training delivery and setting national benchmarks for training of Meat Technology (Level 5) in the country
- Provide flexible and progressive learning opportunity for trainees to receive relevant and up-to-date skills in meat industry
- Provide basis for competency-based assessment which is recognized and accepted by employers in modern days
- Establish a standardized and sustainable training in consultation with the meat industry

### **4. Competencies to be gained after completion of course**

After completing this course, the students will be capable of performing different food processing operations decently in the food industries. Furthermore, this skilled training program enables the students to develop multispectral competencies such as creative thinking, problem solving, research skills, personal and group management, presentation and communication skills, technical and professional negotiations related to food processing operations. The below listed competencies imprinted by this training program are quite prominent to the students' profile to enhance their employability in their career in food sector:

- Knowledge and concepts of processing operations in meat industry

- Creative thinking and troubleshooting skills in food manufacturing
- Potential to translate theoretical knowledge into practice
- Identify and explore potential areas of opportunities in meat sector
- Develop strategies to maintain quality and safety of meat products
- Time management, working in teams and conflict handling among co-workers
- Safe and secure use of workplace tools, techniques and materials at worksites
- Digital documentation and effective communication skills
- Working in commercial setups and meeting the timelines

## **5. Job opportunities available immediately and in the future**

The successful pass outs of this course may avail entrepreneurial opportunities and/or fetch job/employment in food sectors as

- Assistant Slaughterer / Helper (Level-II)
- Meat Cutter / Meat Packer / Butcher (Level-III)
- Assistant Meat Processor / Assistant Supervisor (Level-IV)
- Supervisor/ Assistant Line Inspector (Level-V)

## **6. Trainee Entry Level:**

- Middle

## **7. Minimum Qualification of Trainer**

- 2-5 years of professional experience in food/meat industry after DAE (Food Technology)/ Bachelor degree {BS/ B.Sc.(Hons)} Food Science and Technology/ Meat Science and Technology

## **8. Recommended trainer : trainee ratio**

- The recommended trainer and trainee ratio is 1:25 per class

## **9. Medium of Instruction:**

- Urdu, English or Local Language

## 10. Curriculum Validation Committee

The following members participated in the Validation of Curriculum meeting for the trade “Meat Technology” from November 21-25, 2022 at Park Lane Hotel, Lahore:

| Sr. | Name                       | Designation                                                                                                                              |
|-----|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Mr. Muhammad Nasir Khan    | Ex DD NAVTTC<br>DACUM Facilitator                                                                                                        |
| 2.  | Ms. Saima Asghar           | DACUM Expert, Lahore                                                                                                                     |
| 3.  | Mr. Muhammad Aasim         | Assistant Director<br>NAVTTC Coordinator                                                                                                 |
| 4.  | Dr. Shinawar Waseem Ali    | Associate Professor/Chairman, Department of Food Sciences, University of the Punjab, Lahore<br>Ex-Quality Assurance Officer K&N Pakistan |
| 5.  | Mr. Muhammad Ahmad         | Technical Auditor<br>Halal Food Punjab, Lahore                                                                                           |
| 6.  | Mr. Ibrahim Anwar          | Lecturer Food Technology, GCT Nowshera<br>Representative KP-TEVTA                                                                        |
| 7.  | Mr. Muhammad Shahzad Javed | Senior Research Officer, PBTE                                                                                                            |
| 8.  | Dr. Iahtisham-Ul-Haq       | Assistant Professor, Kauser Abdulla Malik School of Life Science, Forman Christian College (A Chartered University), Lahore              |
| 9.  | Dr. Muhammad Sohaib        | Assistant Professor, Department of Food Science and Human Nutrition, University of Veterinary and Animal Sciences, Lahore                |
| 10. | Dr. Kashif Nauman          | Assistant Professor, Department of Meat Science and Technology, University of Veterinary and Animal Sciences, Lahore                     |
| 11. | Dr. Tabussam Tufail        | Assistant Professor, Department of Food Science and Human Nutrition, University of Lahore                                                |
| 12. | Muhammad Saeed Ahmed       | Farm Manager, Farm Manager Office, University of Veterinary and Animal Sciences Lahore                                                   |
| 13. | Mr. Shakir Manzoor         | Manager Operations, Professional Quality Solutions, Lahore                                                                               |

### Duration of course (total time, theory and practical)

| Module #     | Title                                                              | Theory Total (Hours) | Practical Total (Hours) (Hours) | Total (Hours) (Hours) (Hours) | Credit hours |
|--------------|--------------------------------------------------------------------|----------------------|---------------------------------|-------------------------------|--------------|
| 00000000     | Maintain occupation health & safety and environment standards      | 12                   | 48                              | 60                            | 6            |
| 0721MT01     | Adopt basic good manufacturing practices (GMP) for meat Processing | 12                   | 48                              | 60                            | 6            |
| 0721MT02     | Maintain slaughtering tools and equipment                          | 12                   | 48                              | 60                            | 6            |
| 0721MT03     | Receive live birds/animals                                         | 12                   | 48                              | 60                            | 6            |
| 0721MT04     | Perform slaughtering of poultry/birds                              | 18                   | 72                              | 90                            | 9            |
| 0721MT05     | Perform slaughtering of animals                                    | 18                   | 72                              | 90                            | 9            |
| 0721MT06     | Perform scalding/de-feathering/de-skinning/de-hiding               | 18                   | 72                              | 90                            | 9            |
| 0721MT07     | Perform evisceration and waste management                          | 18                   | 72                              | 90                            | 9            |
| <b>Total</b> |                                                                    | <b>120</b>           | <b>480</b>                      | <b>600</b>                    | <b>60</b>    |

## SUMMARY OF COMPETENCY STANDARDS

The proposed curriculum is composed of 08 modules that will be covered in 600 hrs. It is proposed that the course may be delivered in two years period. The distribution of contact hours (practical & theory) is given below:

- **Theory:** (20%) **Practical** (80%)
- **Theory:** 120 hours
- **Practical:** 480hours

## SUMMARY– OVERVIEW OF THE CURRICULUM

| Module Title                                                                                   | Learning Units                                                                                                                                                                                                                                                                                     | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|----------------------|
| <b>Module 1.</b><br><b>Maintain Occupational Health &amp; Safety and Environment standards</b> | <b>LU1.</b> Apply occupational health and safety measures (OHS)<br><br><b>LU2.</b> Contribute to continuous improvement in OHS practice Identify Hazards at Workplace<br><br><b>LU3.</b> Dispose off hazardous Waste/materials<br><br><b>LU4.</b> Follow safe work procedures relating to own work | 12                | 48                   | 60                   |

|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |    |    |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|
|                                                                                                     | <b>LU5.</b> Maintain First-aid Box<br><br><b>LU6.</b> Maintain Fire Extinguisher<br><br><b>LU7.</b> Follow Environmental, Health and Safety standards                                                                                                                                                                                                                                                                                                                                                |    |    |    |
| <b>Module 2. Adopt Basic Good Manufacturing Practices (GMP) for Food Processing &amp; Packaging</b> | <b>LU1.</b> Apply basic GMP requirements with reference to work place<br><b>LU2.</b> Apply Basic GMP requirements in regard to personal hygiene<br><b>LU3.</b> Apply basic GMP requirements in regard to meat packaging<br><b>LU4.</b> Apply basic GMP requirements to production quality control and in process controls<br><b>LU5.</b> Apply basic GMP requirements in regard to storage (Refrigeration/Freezing)<br><b>LU6.</b> Apply basic GMP requirements in regard to cleaning and sanitation | 12 | 48 | 60 |
| <b>Module 3. Maintain Meat Processing Tools and Equipment</b>                                       | <b>LU1.</b> Prepare meat processing tools<br><b>LU2.</b> Perform cleaning of tools and equipment<br><b>LU3.</b> Apply food grade lubricants of tools/equipment<br><b>LU4.</b> Implement Internal Control Plan (ICP) for tools and equipment<br><b>LU5.</b> Sharp Knives and carcass Handling Equipment's                                                                                                                                                                                             | 12 | 48 | 60 |
| <b>Module 4. Receive live birds/animals</b>                                                         | <b>LU1.</b> Perform physical inspection of live birds/animals<br><b>LU2.</b> Perform weighing of birds/animals<br><b>LU3.</b> Shackle birds<br><b>LU4.</b> Handle animals (cow, sheep, goat) at right alley                                                                                                                                                                                                                                                                                          | 12 | 48 | 60 |

|                                                                                        |                                                                                                                                                                                                                                            |    |    |    |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|
| <b>Module 5.</b><br><b>Perform Slaughtering of Poultry/Birds</b>                       | <b>LU1.</b> Arrange required tools/equipment<br><b>LU2.</b> Examine Shackled birds<br><b>LU3.</b> Apply halal slaughtering method<br><b>LU4.</b> Perform cleaning and sanitation as per schedule/procedure                                 | 18 | 72 | 90 |
| <b>Module 6.</b><br><b>Perform Slaughtering of Animals (Cow, Buffalo, Sheep, Goat)</b> | <b>LU1.</b> Check availability of tools/equipment<br><b>LU2.</b> Apply Halal Slaughtering method<br><b>LU3.</b> Perform cleaning and sanitation as per schedule/procedure                                                                  | 18 | 72 | 90 |
| <b>Module 7.</b><br><b>Perform Scalding/De-feathering/De-Skinning/De-hiding</b>        | <b>LU1.</b> Prepare scalding tank<br><b>LU2.</b> Perform scalding of birds<br><b>LU3.</b> Perform scheduled cleaning of scalding tank<br><b>LU4.</b> Perform de-feathering of birds<br><b>LU5.</b> Perform De-skinning/de-hiding of animal | 18 | 72 | 90 |

|                                                                      |                                                                                                                                                              |    |    |    |
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| <b>Module 8.</b><br><b>Perform Evisceration and Waste Management</b> | <b>LU1.</b> Eviscerate birds<br><b>LU2.</b> Eviscerate animals<br><b>LU3.</b> Handle waste of evisceration process<br><b>LU4.</b> Wash and chill the carcass | 18 | 72 | 90 |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|

## Module.1: Maintain Occupational Health & Safety and Environment standards

**Objectives:** After completing this module, the learner will be able to protect/apply personal health and safety at workplace according to the industry's approved guidelines, procedures and interpret rules/regulations. Trainee will be expected to identify and use Personal Protective Equipment (PPE) according to the work place requirements. The underpinning knowledge regarding personal safety will be sufficient to provide the basis for the job at workplace.

|                  |                    |           |                  |           |               |           |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|
| <b>Duration:</b> | <b>Total hours</b> | <b>60</b> | <b>Practical</b> | <b>48</b> | <b>Theory</b> | <b>12</b> |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|

| Learning Unit                                                   | Learning Outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Learning Elements                                                                                                                                                                                                                                                                                                                                                                                                                                              | Duration                                                              | Materials (Tools & Equipment) Required                                                | Learning Place           |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|
| <b>LU1.</b> Apply occupational health and safety measures (OHS) | <ul style="list-style-type: none"> <li>Perform Work safely at all times, complying with health and safety precautions and other regulations related to food processing &amp; packaging industry.</li> <li>Identify personal safety hazards in the workplace, so that the potential for personal injury, damage to equipment or the workplace is prevented, and corrective action is taken</li> <li>Deal with problems which are within your control, and report those that cannot be resolved to safety officer</li> <li>Keep work area clean and clear of obstructions and storing tools or equipment as per the procedure of industry to overcome any incident</li> <li>Remove personal articles (jewelry, watch, cell phone,</li> </ul> | <ul style="list-style-type: none"> <li>Knowledge of OHS practices concerning the food processing industry (PPEs, Labelling of material, machine safety etc)</li> <li>Understand safety rules and regulations of food industry (Personal Safety, Plant Safety etc.)</li> <li>Importance of safety related Standard Operating Procedure/guidelines (minimize risk, remove health hazards etc.)</li> <li>Enlist safety equipment in manufacturing area</li> </ul> | 3 hours<br>Theory<br><br>9 hour<br>Practical<br><br>Total:12<br>hours | Personal Protective Equipment (safety shoes, gloves, goggles, helmet & ear plug etc.) | Class Room and workplace |

|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                    |                          |                          |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------|--------------------------|
|                                                                                                | <p>etc.) before entering work area.</p> <ul style="list-style-type: none"> <li>Wear Personal Protective Equipment (PPE) as per job</li> </ul>                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Interpret safety signs and symbols (CBR, First Aid, victim handling, firefighting, emergency response plan etc.)</li> <li>Explain disposal techniques related to food industry waste (Coagulation, sedimentation, filtration etc)</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice Current Good Manufacturing Procedures (CGMP) relating to clean work environment</li> <li>Practice the uses of PPE's in work place</li> </ul> |                                                                    |                          |                          |
| <b>LU2.</b> Contribute to continuous improvement in OHS practice Identify Hazards at Workplace | <ul style="list-style-type: none"> <li>Interpret work processes and procedures correctly to identify risk of hazards at workplace</li> <li>Recognize engineering processes, tools, equipment and consumable materials that have the potential to cause harm</li> <li>Identify any potential hazards and take appropriate action to minimize the risk</li> </ul> | <ul style="list-style-type: none"> <li>Understand risks associated with each operation (Physical, chemical &amp; biological hazards)</li> <li>Explain Potential hazards (electrical ,mechanical ,chemical ,biological )and minimize those hazards ( analyze previous incidents reports, risk assessment ,root cause analysis)</li> </ul>                                                                                                                                                                                 | <p>1 hours Theory</p> <p>6 hour Practical</p> <p>Total:7 hours</p> | Health and Safety Manual | Class Room and workplace |

|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                              |                 |                           |
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|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b><u>Practical Activity</u></b> <ul style="list-style-type: none"> <li>Practice repairmen and replacement of parts the importance of work instructions, use of tools &amp; PPEs according to the job. (maintenance of machinery)</li> </ul>                                                                                                                                                                                                                                                                                          |                                                              |                 |                           |
| <b>LU3.</b> Dispose of hazardous Waste/materials             | <ul style="list-style-type: none"> <li>Identify hazardous waste materials need to be disposed off</li> <li>Collect hazardous or non-hazardous waste carefully from the designated area as per approved procedure</li> <li>Use proper disposal hazardous containers for dispose-off hazardous waste as per procedure</li> <li>Take necessary precautions like putting masks and gloves while dispose-off hazardous waste/ materials as per standard operating procedure</li> </ul> | <ul style="list-style-type: none"> <li>Knowledge of hazardous waste materials, (liquid, toxic ,solid etc)</li> <li>Understand the procedure of collecting and disposing of waste (chemical and physical method)</li> </ul> <b><u>Practical Activity</u></b> <ul style="list-style-type: none"> <li>Practice use of proper containers (color based, material based etc) according to workplace</li> <li>Practice the use of PPEs (safety gloves, shoes face mask, goggles etc) while disposing of hazardous waste/materials</li> </ul> | 2 hours Theory<br><br>9 hour Practical<br><br>Total:11 hours | Maintenance box | Class room and Work Place |
| <b>LU4.</b> Follow safe work procedures relating to own work | <ul style="list-style-type: none"> <li>Follow industry's occupational safety rules/regulations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Define Safe work procedure step by step (work permits , log out tag out, )</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          | 2 hours Theory<br>6 hour                                     | First Aid Box   | Class room and Work Place |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                         |           |                           |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------|---------------------------|
|                                    | <ul style="list-style-type: none"> <li>• and Current Good Manufacturing Practices (CGMP)</li> <li>• Deal with problems which are within your control, and report those that cannot be resolved to safety officer</li> <li>• Keep work area clean and clear of obstructions, and storing tools or equipment as per the procedure of industry to overcome any incident</li> <li>• Use personal protective equipment (PPE)</li> </ul> | <ul style="list-style-type: none"> <li>• Purpose of safe work procedures</li> <li>• Equipment operating and control procedures</li> <li>• List safe work practice</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Safe work practices in healthcare /sanitation</li> <li>• Practice the PPEs and their uses</li> </ul>                                                    | <p>Practical</p> <p>Total:7 hours</p>                                   |           |                           |
| <b>LU5. Maintain First-aid Box</b> | <ul style="list-style-type: none"> <li>• Ensure availability of first aid box</li> <li>• Check first aid box for requisite emergency medicines</li> <li>• Check expiry of medicines</li> <li>• Perform first aid treatment against electric shocks</li> <li>• Perform first aid treatment/bandages against minor injuries</li> </ul>                                                                                               | <ul style="list-style-type: none"> <li>• Define a good basic first aid kit checklist &amp; location (list of emergency pH ones, sterile gauze pads, adhesive tape/bandages, elastic bandage, splint, antiseptic wipes)</li> <li>• Understand the procedure of maintaining first aid box (availability of medicine scissor, life \ saving and drug etc.)</li> <li>• Define Methods of reading of drug label</li> </ul> | <p>2 hours<br/>Theory<br/>6 hour<br/>Practical</p> <p>Total:8 hours</p> | Air Vents | Class room and Work Place |

|                                        |                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                         |              |                           |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------|---------------------------|
|                                        |                                                                                                                                                           | <p>(use by date , best before)</p> <ul style="list-style-type: none"> <li>Define the procedure for electrical shocks treatment (AED method)</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice to maintaining First aid kit/box</li> <li>Practice the methods of bandage for minor injury (single knot, and double knot)</li> </ul>                                                                                              |                                                                         |              |                           |
| <b>LU6.</b> Maintain Fire Extinguisher | <ul style="list-style-type: none"> <li>Check expiry of fire extinguisher</li> <li>Operate fire extinguisher</li> <li>Replace fire extinguisher</li> </ul> | <ul style="list-style-type: none"> <li>Understand the methods of checking expiry for fire extinguisher (use by date, best before use)</li> <li>Knowledge of procedure for operating fire extinguisher (PASS: pin, aim, squeeze, sweep)</li> <li>Understand the parameters for replacement (expiry, leakage, damage and less pressure)</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice to operate fire extinguisher</li> </ul> | <p>1 hours<br/>Theory<br/>6 hour<br/>Practical</p> <p>Total:7 hours</p> | Safety Siren | Class room and Work Place |

|                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                   |  |                           |
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|                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                   |  |                           |
| <b>LU7.</b> Follow Environmental, Health and Safety standards | <ul style="list-style-type: none"> <li>• Follow Health and Safety Rules</li> <li>•</li> <li>• Ensure environmental safety</li> <li>•</li> <li>• Ensure compliance of metrology effects</li> <li>•</li> <li>• Ensure workplace safety by following safety standards of food industry</li> <li>•</li> <li>• Ensure safety while food processing and packaging</li> <li>•</li> <li>• Store all tools and equipment properly in a safe area</li> </ul> | <ul style="list-style-type: none"> <li>• Define environmental health and safety at workplace (prevention of contamination from man, machine method etc)</li> <li>• Understand EMS environment management systems (maintain the resources, remove flame able material from work place)</li> <li>• Importance of safety standards for a work place (dry floor by water, chemical and lubricants spillage etc)</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice the safety parameters for meat processing and packaging (safe guards for moving parts, tag hot and cold surfaces, tags on under maintenance part)</li> <li>• Practice the storage of tools and equipment (tool</li> </ul> | <p>2 hours</p> <p>Theory</p> <p>6 hour</p> <p>Practical</p> <p>Total: 8 hours</p> |  | Class room and Work Place |

|  |  |                                            |  |  |  |
|--|--|--------------------------------------------|--|--|--|
|  |  | coding, cleaning of<br>tool after use etc) |  |  |  |
|--|--|--------------------------------------------|--|--|--|

## Module 02 Adopt basic good manufacturing practices (GMP) for Meat Processing

**Objectives:** After completing this module, the learner will be able to identify the competencies for GMP guidelines commonly used to implement, manage and improve quality standard programs in food processing. The trainees will understand GMP systems in different food operations, including procedures and documentation for product safety, hygienic product manufacture and handling, packaging and labelling within specifications, as well as proper documentation and record keeping.

|                  |                    |           |                  |           |               |           |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|
| <b>Duration:</b> | <b>Total hours</b> | <b>60</b> | <b>Practical</b> | <b>48</b> | <b>Theory</b> | <b>12</b> |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|

| Learning Unit                                                               | Learning Outcomes                                                                                                                                                                                                                                       | Learning Elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Duration                                                    | Materials (Tools & Equipment) Required                                                            | Learning Place            |
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| <b>LU1.</b> Apply basic GMP requirements with reference to work place       | <ul style="list-style-type: none"> <li>Perform adequate cleaning and/or disinfection</li> <li>Set of space for Meat processing and storage of equipment</li> <li>Follow safety rules and regulations for the meat processing industry</li> </ul>        | <ul style="list-style-type: none"> <li>Importance of layout in meat industry (display lay-out in variant places)</li> <li>Importance of ventilation (exhaust and ducting system)</li> <li>Understand standards and regulations in meat industry</li> </ul> <p><b><u>Practical Activity:</u></b></p> <ul style="list-style-type: none"> <li>Practice the segregation of raw material, processed material, dirty and clean area according to workplace operation procedures</li> </ul> | 2 hours Theory<br><br>6 hour Practical<br><br>Total:8 hours | Disinfectors, sanitizer                                                                           | Class room and Work Place |
| <b>LU2.</b> Apply Basic GMP requirements with reference to personal hygiene | <ul style="list-style-type: none"> <li>Perform proper hand washing and disinfection procedures before entering production</li> <li>Wear Personal Protective Equipment (PPE) as per SOPs</li> <li>Report to supervisor in the case of illness</li> </ul> | <ul style="list-style-type: none"> <li>Knowledge of Personal hygiene in meat processing</li> <li>Importance of entrance protocol as per area requirement.</li> </ul>                                                                                                                                                                                                                                                                                                                 | 2 hours Theory<br><br>9 hour Practical                      | <ul style="list-style-type: none"> <li>PPE's</li> <li>soap</li> <li>White board marker</li> </ul> | Class room and Work Place |

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|                                                                           |                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Understand GMP standards for ensuring food safety through personal hygiene</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice hand washing procedures</li> <li>Identify types of PPEs and their uses</li> <li>Demonstrate to handling of illness/injuries to be must reported to Supervisors</li> </ul>                                                                            | Total:11 hours                                       | <ul style="list-style-type: none"> <li>Duster</li> </ul>                                                          |                           |
| <b>LU3.</b> Apply basic GMP requirements with reference to meat packaging | <ul style="list-style-type: none"> <li>Prevent contamination in slaughtering, processing and storage</li> <li>Maintain packing surfaces and equipment to minimize product damage and contamination</li> </ul> | <ul style="list-style-type: none"> <li>Knowledge of different types of contaminations from packaging materials</li> <li>Understanding of different types of packaging materials used for meat packaging</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice GMP in meat packaging area (packaging environment &amp; packaging parameters)</li> <li>Practice how to avoid contamination during packaging of meat</li> </ul> | 2 hours Theory<br>9 hour Practical<br>Total:11 hours | <ul style="list-style-type: none"> <li>PPE's</li> <li>soap</li> <li>White board marker</li> <li>Duster</li> </ul> | Class room and Work Place |

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| <b>LU4.</b> Apply basic GMP requirements to production quality control and in process controls | <ul style="list-style-type: none"> <li>Follow master production instructions (SOPs)</li> <li>Follow basic quality control measure under supervision</li> </ul>                                                           | <ul style="list-style-type: none"> <li>Understanding of GMPs in a meat processing area</li> <li>Knowledge of Process flow in meat industry</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice of color coding of equipment and tools</li> </ul>                                                                                                   | 2 hours Theory<br>9 hour Practical<br>Total:11 hours | Paint brushes<br>Paint boxes<br>Computer<br>Notebooks<br>Stationary<br>Multimedia<br>QC charts | Class room and Work Place |
| <b>LU5.</b> Apply basic GMP requirements with reference to storage (Refrigeration/Freezing)    | <ul style="list-style-type: none"> <li>Store materials and end product appropriately</li> <li>Follow First Expire First Out (FEFO)/First In First Out (FIFO)</li> <li>Perform stacking as per instruction</li> </ul>     | <ul style="list-style-type: none"> <li>Understanding of FEFO and FIFO and its importance</li> <li>Define the materials inventory and stock receiving</li> <li>Knowledge of recommended procedure of storage meat at controlled temperature</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice Inventory Control According to workplace</li> </ul> | 2 hours Theory<br>6 hour Practical<br>Total:8 hours  | Refrigerator<br>Deep Freezer<br>Cryo gloves<br>Ice Scraper<br>Probe Thermometer                | Class room and Work Place |
| <b>LU6.</b> Apply basic GMP requirements with reference to cleaning and sanitation             | <ul style="list-style-type: none"> <li>Follow sanitation procedures for all food contact equipment and food contact surfaces</li> <li>Report sanitation failures</li> <li>Record cleaning and sanitation work</li> </ul> | <ul style="list-style-type: none"> <li>Understanding the importance of safe/hygiene meat supply</li> <li>Knowledge of appropriate measures for safe supply of meat</li> <li>Understanding the importance of</li> </ul>                                                                                                                                                                            | 2 hours Theory<br>9 hour Practical<br>Total:11 hours | Hose cleaning pipe, scrubbers, mops, color coded brushes,                                      | Class room and Work Place |

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|  |  | <p>segregation of area into different zones</p> <ul style="list-style-type: none"> <li>• Knowledge of the routes of contamination</li> <li>• Differentiate between chance contamination and cross contamination</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice to prevent cross contamination according to work place</li> <li>• Practice to record data</li> </ul> |  | Food Grade Cleaning Chemicals / Sanitizers |  |
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### Module 3 Maintain Meat Processing tools and equipment

**Objective:** After completing this module, the learner will be able to apply skills and knowledge to perform processing functions in accordance with the industry's approved guidelines and procedures.

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| <b>Duration:</b> | <b>Total hours</b> | <b>60</b> | <b>Practical</b> | <b>48</b> | <b>Theory</b> | <b>12</b> |
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| Learning Unit                                       | Learning Outcomes                                                                                                                                                                                                                                                                          | Learning Elements                                                                                                                                                                                                                                                                                                 | Duration                                                     | Materials (Tools & Equipment) Required                                | Learning Place            |
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| <b>LU1.</b> Prepare meat processing tools           | <ul style="list-style-type: none"> <li>Identify meat processing tools.</li> <li>Apply color coded scheme to identify knives and cutting board</li> <li>Prepare Slaughtering tool (knife, Sharp edges)</li> <li>Prepare the bone cutting Saw</li> <li>Prepare de-skinning knife.</li> </ul> | <ul style="list-style-type: none"> <li>Understanding of manufacturer's instructions regarding tools and equipment: uses and specifications</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice color coding and schemes for meat cutting devices/knives</li> </ul> | 2 hours Theory<br><br>9 hour Practical<br><br>Total:11 hours | Knife kit<br><br>bone cutting Saw                                     | Class room and Work Place |
| <b>LU2.</b> Perform cleaning of tools and equipment | <ul style="list-style-type: none"> <li>Clean and wash all equipment, utensils and machines before and after working</li> <li>Disinfect tools and equipment according to procedure</li> <li>Record relevant data</li> </ul>                                                                 | <ul style="list-style-type: none"> <li>Define Sanitizing agents: Uses and Specification</li> <li>Knowledge of disinfection without chemicals</li> <li>Knowledge of cleaning and stowing of tools and equipment/ instruments</li> <li>Understanding of equipment/ machine</li> </ul>                               | 3 hours Theory<br><br>9 hour Practical<br><br>Total:12 hours | Scabbed and Color coded brush<br><br>Sanitizer<br><br>Cleaning agents | Class room and Work Place |

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|                                                                         |                                                                                                                                                                                                                                     | Prevention from the cross contamination<br><u><b>Practical Activity</b></u> <ul style="list-style-type: none"> <li>Practice disinfection of tools/equipment</li> <li>Practice to maintain cleaning record sheets</li> </ul>                                                                                                                                              |                                                               |                                                                  |                           |
| <b>LU3.</b> Apply food grade lubricants of tools/equipment              | <ul style="list-style-type: none"> <li>Diagnose and rectify the machine faults</li> <li>Apply proper food lubrication of machinery as per schedule</li> </ul>                                                                       | <ul style="list-style-type: none"> <li>Differentiate between food grade &amp; non-food grade lubricants</li> <li>Enlist food grade lubricants</li> </ul> <u><b>Practical Activity</b></u> <ul style="list-style-type: none"> <li>Demonstrate lubrication of machinery</li> </ul>                                                                                         | 2 hours Theory<br><br>9 hour Practical<br><br>Total:11 hours  | Grease gun<br><br>Food grade lubricants<br><br>Gloves            | Class room and Work Place |
| <b>LU4.</b> Perform Internal Control Plan (ICP) for tools and equipment | <ul style="list-style-type: none"> <li>Check the tools/equipment regularly</li> <li>Identify damaged tools/equipment</li> <li>Perform repair/replace tools/parts</li> <li>Record of tools/equipment as per industry SOPs</li> </ul> | <ul style="list-style-type: none"> <li>Identify damaged tools / equipment</li> <li>Knowledge of manufacturer specifications of tools / equipment</li> </ul> <u><b>Practical Activity</b></u> <ul style="list-style-type: none"> <li>Practice to control damage of tools /equipment at workplace</li> <li>Practice to maintain damaged tools/equipment records</li> </ul> | 3 hours Theory<br><br>12 hour Practical<br><br>Total:15 hours | Repairing Kit<br><br>Log Book<br><br>Thermometer (probe, IR Gun) | Class room and Work Place |

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| <b>LU5.</b> Sharp Knives and carcass Handling Equipment | <ul style="list-style-type: none"> <li>• Sharp Knives with steel rod / grinding stone</li> <li>• Clean fat from knives</li> <li>• Sharp the steel hooks</li> </ul> | <ul style="list-style-type: none"> <li>• knowledge of knife blade and its parts</li> <li>• Steps for sharpening of knife</li> <li>• Knowledge of maintaining knives and related equipment</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice to sharpen knife</li> <li>• Practice to handle knives safely</li> </ul> | <p>2 hours<br/>Theory</p> <p>9 hour<br/>Practical</p> <p>Total:11<br/>hours</p> | <p>Knife Sharpening machine / steel rod / grinding stone</p> <p>Steel hooks</p> | <p>Class room and Work Place</p> |
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## Module 04 Receive live birds/animals

**Objective:** After completing this module, the learner will be able to apply skills and knowledge to apply how to receive live birds/animals. The trainees will be able to enhance skills for handling of animal with its welfare.

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| <b>Duration:</b> | <b>Total hours</b> | <b>60</b> | <b>Practical</b> | <b>48</b> | <b>Theory</b> | <b>12</b> |
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| Learning Unit                                                 | Learning Outcomes                                                                                                                                                                                                                                                                          | Learning Elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Duration                                                               | Materials (Tools & Equipment) Required                                                            | Learning Place            |
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| <b>LU1.</b> Perform physical inspection of live birds/animals | <ul style="list-style-type: none"> <li>Check physical condition of bird/animal at receiving</li> <li>Separate abnormal birds/animals</li> <li>Inform about abnormality to supervisor</li> <li>Record mortality rate in case of poultry/birds</li> <li>Wash animals at receiving</li> </ul> | <ul style="list-style-type: none"> <li>Understanding of the handling of live birds/animals in accordance with animal welfare</li> <li>knowledge of operations manual</li> <li>Ante-mortem inspection</li> <li>Understanding of the layout of live bird/animals reception area</li> <li>Understanding of physical inspection parameters of live animals and poultry (physical feces, flue, biological, toxic, injury)</li> <li>Different types of cross contaminations and their prevention</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice handling of suspected birds/ animals</li> <li>Practice animal handling procedures Handling of dead and culled birds/animals</li> </ul> | 3 hours<br>Theory<br><br>12 hour<br>Practical<br><br>Total:15<br>hours | Thermometer (Probe, IR Gun)<br><br>PPEs<br><br>Washing tank<br><br>Ante-mortem Performa/checklist | Class room and Work Place |
| <b>LU2.</b> Perform weighing of birds/ animals                | <ul style="list-style-type: none"> <li>Calibrate measuring equipment</li> </ul>                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Understand measuring units of various materials used in Meat processing.</li> <li>Define calibration</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3 hours<br>Theory<br><br>12 hour                                       | Weighing scales<br><br>Computer<br><br>Stationary items                                           | Class room and Work Place |

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|                                                              | <ul style="list-style-type: none"> <li>• Weigh the birds/animals as per requirements</li> <li>• Maintain records according to work instructions</li> </ul>                       | <ul style="list-style-type: none"> <li>• Define record management</li> <li>• Understanding of record keeping</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Demonstrate measuring techniques for animals/bird and meat products as per procedure</li> <li>• Practice of segregation and inventory control of bird/animals.</li> <li>• Practice to record all data at workplace</li> </ul> | <p>Practical</p> <p>Total:15 hours</p>                               | PPEs                  |                           |
| <b>LU3.</b> Shackle birds                                    | <ul style="list-style-type: none"> <li>• Hang birds on shackles</li> <li>• Perform vertical hanging (head toward ground)</li> </ul>                                              | <ul style="list-style-type: none"> <li>• Knowledge of Shackling and lift the animal in accordance with workplace requirements and OSHS</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice to shackle and loading the birds</li> </ul>                                                                                                                                                | <p>2 hours Theory</p> <p>9 hour Practical</p> <p>Total:11 hours</p>  | Steel Hooks, Shackles | Class room and Work Place |
| <b>LU4.</b> Handle animals (cow, sheep, goat) at right alley | <ul style="list-style-type: none"> <li>• Use dedicated path for handling animals</li> <li>• Handle animal carefully to safe guard personnel safety and animal welfare</li> </ul> | <ul style="list-style-type: none"> <li>• Understand the Use and maintain hoisting / lifting equipment in accordance with manufacturer's specification</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Demonstrate handling of animals</li> </ul>                                                                                                                                           | <p>4 hours Theory</p> <p>15 hour Practical</p> <p>Total:19 hours</p> |                       |                           |

## Module 05 Perform Slaughtering of Poultry/Birds

**Objective:** After completing this module, the learner will be able to apply skills and specific knowledge to perform slaughtering of poultry/birds. The learner will be able to understand about halal slaughtering method.

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| <b>Duration:</b> | <b>Total hours</b> | <b>90</b> | <b>Practical</b> | <b>72</b> | <b>Theory</b> | <b>18</b> |
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| Learning Unit                                | Learning Outcomes                                                                                                                                                              | Learning Elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Duration                                                      | Materials (Tools & Equipment) Required                                                   | Learning Place            |
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| <b>LU1.</b> Arrange required tools/equipment | <ul style="list-style-type: none"> <li>Check availability of slaughtering knife</li> <li>Check sharpness of slaughtering knife</li> <li>Check availability of water</li> </ul> | <ul style="list-style-type: none"> <li>Define types of slaughtering knives</li> <li>Understanding of the manufacturer's specifications for tools/ equipment</li> <li>Understanding of the working of slaughtering knives</li> <li>Steps in preparation for sharpening of knife</li> <li>Define potable water</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Practice to sharpen knife as per SOPs</li> <li>Demonstration of PPEs</li> </ul> | 3 hours Theory<br><br>18 hour Practical<br><br>Total:21 hours | Slaughtering Knife<br><br>PPE's (Goggles, face shield, comical suite, steel mesh gloves) | Class room and Work Place |
| <b>LU2.</b> Examine shackled poultry/birds   | <ul style="list-style-type: none"> <li>Check neck toward sternum of poultry/birds in front of slaughterer</li> <li>Check the functioning of blue light</li> </ul>              | <ul style="list-style-type: none"> <li>Knowledge of hanging position of birds/poultry</li> <li>Importance of the shackled poultry line speed</li> <li>Understanding of different lights related to slaughtering</li> <li>Importance of Blue Light</li> </ul>                                                                                                                                                                                                                           | 3 hours Theory<br><br>18 hour Practical<br><br>Total:21 hours | Conveyor, Shackles                                                                       | Class room and Work Place |

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|                                                                       |                                                                                                                                                                                                                                                                                             | <u><b>Practical Activity</b></u> <ul style="list-style-type: none"> <li>Practice to shackle the birds as per SOPs</li> </ul>                                                                                                                                                                                                                                                                                                                |                                                               |                                                                                          |                           |
| <b>LU3.</b> Apply halal slaughtering method                           | <ul style="list-style-type: none"> <li>Face birds towards Qibla</li> <li>Recite TASMIYA</li> <li>Cut trachea, Esophagus and both Carotid arteries and Juglar veins with a single cut</li> <li>Cut should be through the wedge of knife</li> <li>Allow complete bleeding of birds</li> </ul> | <ul style="list-style-type: none"> <li>Understanding of different slaughtering methods</li> <li>Knowledge of basic concepts of Halal slaughtering</li> <li>Pre-requisites for halal slaughtering</li> </ul> <u><b>Practical Activity</b></u> <ul style="list-style-type: none"> <li>Demonstrate Halal slaughtering of birds/poultry</li> <li>Demonstrate Veins, arteries, trachea, Esophagus and spinal cord of Slaughtered bird</li> </ul> | 6 hours Theory<br><br>18 hour Practical<br><br>Total:24 hours | Slaughtering Knife<br><br>PPE's (Goggles, face shield, comical suite, steel mesh gloves) | Class room and Work Place |
| <b>LU4.</b> Perform cleaning and sanitation as per schedule/procedure | <ul style="list-style-type: none"> <li>Use color coded cleaning tools for cleaning of blood, floor and apparatus</li> <li>Clean as per requirement of SOPs</li> <li>Perform disinfection of food contact surfaces</li> </ul>                                                                | <ul style="list-style-type: none"> <li>Importance of quality and quantity of cleaning material in sanitization (e.g. concentration of cleaning material)</li> <li>Understanding of importance of the color coding for cleaning and sanitation tools</li> <li>Utilities used in cleaning &amp; sanitation</li> </ul>                                                                                                                         | 6 hours Theory<br><br>18hour Practical<br><br>Total:24 hours  | Cleaning trolleys<br><br>Cleaning hose pips, shower guns<br><br>Sanitizers               | Class room and Work Place |

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|  |  | <b><u>Practical Activity</u></b> <ul style="list-style-type: none"> <li>• Demonstrate the handling procedures of cleaning &amp; sanitation materials as per SOPs</li> <li>• Perform cleaning/disinfection of shackles/knives</li> </ul> |  |  |  |
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## Module 06 Perform Slaughtering of Animals (Cow, Buffalo, Sheep, Goat)

**Objective:** After completing this module, the learner will be able to apply skills and specific knowledge to perform slaughtering of animals. The learner will be able to understand about halal slaughtering method of animals (Cow, Buffalo, Sheep, Goat).

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| <b>Duration:</b> | <b>Total hours</b> | <b>90</b> | <b>Practical</b> | <b>72</b> | <b>Theory</b> | <b>18</b> |
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| Learning Unit                                | Learning Outcomes                                                                                                                                                                                                                                | Learning Elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Duration                                                      | Materials (Tools & Equipment) Required                                                                            | Learning Place            |
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| <b>LU1. Arrange required tools/equipment</b> | <ul style="list-style-type: none"> <li>Check the availability of slaughtering knife</li> <li>Check the sharpness of Slaughtering knife</li> <li>Check the availability of water</li> <li>Check the working of animal slaughtering box</li> </ul> | <ul style="list-style-type: none"> <li>Understanding of the manufacturer's specifications for tools/equipment</li> <li>Understanding of the working of slaughtering knives</li> <li>Different types of slaughtering knives</li> <li>Identify steps in preparation for sharpening of knife</li> <li>Knowledge of types and functioning of slaughtering box</li> </ul> <p><b>Practical Activity</b></p> <ul style="list-style-type: none"> <li>Practice to sharpen knife as per SOPs</li> <li>Demonstrate functioning of slaughtering box</li> </ul> | 6 hours Theory<br><br>24 hour Practical<br><br>Total:30 hours | Slaughtering Knife<br><br>PPE's (Goggles, face shield, comical suite, gloves)<br><br>Slaughtering box<br><br>Rope | Class room and Work Place |
| <b>LU2. Apply Halal Slaughtering method</b>  | <ul style="list-style-type: none"> <li>Handle the animal for slaughtering</li> <li>Lay down the animal horizontally</li> <li>Face the animal toward Qibla</li> </ul>                                                                             | <ul style="list-style-type: none"> <li>Working of machine/equipment used for hanging/laying</li> <li>Different slaughtering methods</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     | 6 hours Theory<br><br>30 hour Practical                       | Slaughtering knives<br><br>Steel mesh gloves                                                                      | Class room and Work Place |

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|                                                                       | <ul style="list-style-type: none"> <li>• Recite TASMIYA</li> <li>• Cut Trachea, Esophagus and both the Carotid arteries and Juglar veins in single cut</li> <li>• Cut should be through the wedge of knife</li> <li>• Allow complete bleeding of animals</li> </ul>                                                             | <ul style="list-style-type: none"> <li>• Knowledge of basic concepts of halal slaughtering</li> <li>• Knowledge of Pre-requisites for halal slaughtering</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• </li> <li>• Practice to hang/lay down position of animals</li> <li>• Demonstrate procedures for head clipping</li> <li>• Demonstrate Halal Slaughtering Method</li> <li>• Demonstrate Veins, arteries, trachea, Esophagus and spinal cord</li> </ul> | Total:36 hours                                               | Rope                                                     |                           |
| <b>LU3.</b> Perform cleaning and sanitation as per schedule/procedure | <ul style="list-style-type: none"> <li>• Select appropriate method of cleaning as per process nature (dry and wet cleaning)</li> <li>• Use of color coded cleaning tools for food and non-food surfaces</li> <li>• Clean as per instructions</li> <li>• Perform disinfection of food contact surfaces where required</li> </ul> | <ul style="list-style-type: none"> <li>• Importance of quality and quantity of cleaning material in sanitization (e.g. concentration of cleaning material)</li> <li>• Understanding of importance of the color coding for cleaning and sanitation tools</li> <li>• Utilities used in cleaning &amp; sanitation</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Demonstrate the handling procedures of</li> </ul>                                              | 6 hours Theory<br><br>18hour Practical<br><br>Total:24 hours | Cleaning trolleys<br><br>Cleaning hose pips, shower guns | Class room and Work Place |

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|  |  | <p>cleaning &amp; sanitation materials as per SOPs</p> <ul style="list-style-type: none"> <li>• Perform cleaning/disinfection of contact surfaces</li> </ul> |  |  |  |
|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|

## Module 07 Perform Scalding/De-feathering/De-Skinning/De-hiding

**Objective:** After completing this module, the learner will be able to understand the scalding/De-skinning/De-hiding methods. The learner will also know about the operation of scalding tank for birds, its cleaning and de-hiding methods of animals.

|                  |                    |           |                  |           |               |           |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|
| <b>Duration:</b> | <b>Total hours</b> | <b>90</b> | <b>Practical</b> | <b>72</b> | <b>Theory</b> | <b>18</b> |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|

| Learning Unit                         | Learning Outcomes                                                                                                                                                    | Learning Elements                                                                                                                                                                                                                                                                                                                              | Duration                                                      | Materials (Tools & Equipment) Required                                        | Learning Place            |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------|
| <b>LU1.</b> Prepare scalding tank     | <ul style="list-style-type: none"> <li>Warm the water as per required temperature</li> <li>Check temperature</li> </ul>                                              | <ul style="list-style-type: none"> <li>Knowledge of scalding tank and its components</li> <li>Different temperatures and their impact on the meat</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Demonstrate use of temperature Monitoring and Measuring Equipment</li> </ul>                       | 2 hours Theory<br><br>9 hour Practical<br><br>Total:11 hours  | Scalding tank<br><br>Water Gaesser<br><br>Buckets/Tubs/Containers<br><br>PPEs | Class room and Work Place |
| <b>LU2.</b> Perform scalding of birds | <ul style="list-style-type: none"> <li>Allow desensitization of the bird</li> <li>Adjust the speed and time for scalding</li> <li>Maintain level of water</li> </ul> | <ul style="list-style-type: none"> <li>Define desensitization of bird</li> <li>Understanding different types of scalding tanks and their specifications</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>Demonstrate how to maintain water level and cleanliness during and after scalding</li> </ul> | 4 hours Theory<br><br>15 hour Practical<br><br>Total:19 hours | Scalding tank<br><br>Probe thermometer                                        | Class room and Work Place |

|                                                         |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                        |                                                       |                           |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------|---------------------------|
| <b>LU3.</b> Perform scheduled cleaning of scalding tank | <ul style="list-style-type: none"> <li>• Clean the scalding tub</li> <li>• Keep record of cleaning</li> </ul>                                                                                                                                        | <ul style="list-style-type: none"> <li>• Handling procedures of cleaning &amp; sanitation materials</li> <li>• Knowledge of working components of scalding tank</li> <li>• Define cross contamination</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice cleaning of scalding tank</li> <li>• Perform record keeping</li> </ul>                                                                                                                                                                                      | 3 hours<br>Theory<br><br>12 hour<br>Practical<br><br>Total:15<br>hours | Scalding tank<br>PPEs<br>Food grade sanitizing agents | Class room and Work Place |
| <b>LU4.</b> Perform de-feathering of birds              | <ul style="list-style-type: none"> <li>• Check efficiency of mechanical plucker</li> <li>• Check fingers of plucking machine</li> <li>• Adjust fingers of plucking machine according to bird size</li> <li>• Clean waste of de-feathering</li> </ul> | <ul style="list-style-type: none"> <li>• Understanding different types of plucker and components</li> <li>• Understanding of the cleaning methods of plucker according to manufacturer guidance</li> <li>• Knowledge of how to monitor fingers breakage in mechanical plucker</li> <li>• Enlist deformities in carcass during plucking</li> <li>• Knowledge of singeing and pinning</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice Plucking of birds' feather</li> <li>• Perform singeing and pinning</li> </ul> | 4 hours<br>Theory<br><br>15 hour<br>Practical<br><br>Total:19<br>hours | Plucking machine<br>Food grade sanitizers<br>PPEs     | Class room and Work Place |

|                                                            |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                   |                                                                                           |                                  |
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| <p><b>LU5.</b> Perform De-skinning/de-hiding of animal</p> | <ul style="list-style-type: none"> <li>• Cut legs from joints</li> <li>• Hang on hooks for de-skinning/de-hiding or bed de-skinning</li> <li>• Handle skin of animal</li> </ul> | <ul style="list-style-type: none"> <li>• Describe different de-skinning/de-hiding procedures</li> <li>• Knowledge of different skinning/de-hiding machines</li> <li>• Identify possible sources of contamination during complete skinning/de-hiding and ways to prevent it</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Perform de-skinning/de-hiding of animals</li> </ul> | <p>5 hours<br/>Theory</p> <p>21 hour<br/>Practical</p> <p>Total: 26<br/>hours</p> | <p>Knives</p> <p>Hooks</p> <p>Shackles/Conveyers</p> <p>De-skinning/de-hiding machine</p> | <p>Class room and Work Place</p> |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------|

## Module 08 Perform Evisceration and Waste Management

**Objective:** After completing this module, the learner will be able to apply skills and knowledge to perform evisceration process and its waste management. The trainees will be able to know about edible and non-edible offal.

|                  |                    |           |                  |           |               |           |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|
| <b>Duration:</b> | <b>Total hours</b> | <b>90</b> | <b>Practical</b> | <b>72</b> | <b>Theory</b> | <b>18</b> |
|------------------|--------------------|-----------|------------------|-----------|---------------|-----------|

| Learning Unit                  | Learning Outcomes                                                                                                                                                                    | Learning Elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Duration                                                       | Materials (Tools & Equipment) Required                                            | Learning Place            |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|
| <b>LU1.</b> Eviscerate birds   | <ul style="list-style-type: none"> <li>• Cut abdomen</li> <li>• Remove offal</li> <li>• Check efficiency of evisceration machine (auto line)</li> <li>• Cut feet of birds</li> </ul> | <ul style="list-style-type: none"> <li>• Knowledge of evisceration process in accordance with workplace and OSHS requirements</li> <li>• Identify organs to be removed and subjected for inspection in accordance with regulatory requirements</li> <li>• Understanding of the removal of digestive tract and pluck</li> </ul> <p><b>Practical Activity</b></p> <ul style="list-style-type: none"> <li>• Performs evisceration of birds</li> <li>• Perform cleaning of evisceration machine</li> </ul> | 5 hours Theory<br><br>21 hour Practical<br><br>Total: 26 hours | Knife<br>Vent cutter<br>Neck cutter<br>Offal removal machine<br>PPEs              | Class room and Work Place |
| <b>LU2.</b> Eviscerate animals | <ul style="list-style-type: none"> <li>• Cut abdomen</li> <li>• Remove offal</li> <li>• Segregate the edible and non-edible offal</li> </ul>                                         | <ul style="list-style-type: none"> <li>• Identify organs to be removed and subjected for inspection in accordance with regulatory requirements</li> <li>• Identify edible offal (Lungs, Rumen, Liver, Spleen, Kidneys, heart)</li> <li>• Understanding of non-edible offal (Small / large intestine, Manure etc.)</li> </ul>                                                                                                                                                                           | 5 hours Theory<br><br>21 hour Practical<br><br>Total: 26 hours | Knife<br>Food grade cleaning agents and disinfectants<br>Food grade Tubs/ baskets | Class room and Work Place |

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|                                                  |                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Interpretation of manufacturer's specifications of machine</li> <li>• Understanding removal of digestive tract and pluck without contaminating the carcass</li> </ul> <p><b>Practical Activity</b></p> <ul style="list-style-type: none"> <li>• Perform evisceration process in accordance with workplace and OSHS requirements</li> <li>• Perform cleaning of the edible offals (liver, kidney, heart, lungs etc.)</li> <li>• Demonstrate evisceration of animals</li> <li>• Perform cleaning of workplace</li> </ul> |                                                                | PPEs                                                                                         |                           |
| <b>LU3.</b> Handle waste of evisceration process | <ul style="list-style-type: none"> <li>• Trim offal</li> <li>• Remove offal fat</li> <li>• Clean non-edible offal</li> <li>• Dispose off condemned material</li> </ul> | <ul style="list-style-type: none"> <li>• Identify non-edible offal (Small intestine, Manure etc.)</li> <li>• Identify and define different types of cleaning and sanitizing chemicals and agents</li> <li>• Understanding of eviscerated waste management</li> </ul> <p><b>Practical Activity</b></p> <ul style="list-style-type: none"> <li>• Perform cleaning of the non-edible offals (rumen, large intestine)</li> <li>• Practice waste disposal</li> </ul>                                                                                                 | 4 hours Theory<br><br>15 hour Practical<br><br>Total: 19 hours | Food grade Tubs/ baskets<br>PPEs<br>Trolleys<br>Food grade cleaning agents and disinfectants | Class room and Work Place |

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| <b>LU4.</b> Wash and chill the carcass | <ul style="list-style-type: none"> <li>• Wash carcass with water</li> <li>• Check temperature of chilling water and storage room</li> <li>• Perform carcass splitting/quartering</li> <li>• Chill carcass of animals</li> <li>• Clean and disinfect chiller</li> </ul> | <ul style="list-style-type: none"> <li>• Knowledge of carcass cleaning</li> <li>• Knowledge of carcass splitting / quartering</li> <li>• Maintenance of the splitting and quartering equipment</li> <li>• Identify possible sources of contamination and ways to prevent it</li> <li>• Enlist chilling methods</li> <li>• Identify and describe different types of carcass cleaning and sanitizing chemicals and agents</li> </ul> <p><b><u>Practical Activity</u></b></p> <ul style="list-style-type: none"> <li>• Practice carcass splitting and quartering as per SOPs</li> <li>• Practice cleaning and disinfection of carcass</li> <li>• Practice cleaning and disinfection of chiller</li> </ul> | 4 hours<br>Theory<br><br>15 hour<br>Practical<br><br>Total: 19<br>hours | Knives<br><br>Trays<br><br>PPEs<br><br>Chiller<br><br>Sanitizing<br>agents | Class<br>room and<br>Work<br>Place |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------|

## LIST OF TOOL AND EQUIPMENT

| SR.NO | Tools                                    |  |
|-------|------------------------------------------|--|
| 1.    | Slaughtering Knife                       |  |
| 2.    | Hand Saw                                 |  |
| 3.    | Carcass Fabrication Knife                |  |
| 4.    | Boning hook                              |  |
| 5.    | Scabbard                                 |  |
| 6.    | Steel and Sharpener                      |  |
| 7.    | Spray applicator                         |  |
| 8.    | Gambler                                  |  |
| 9.    | Cut proof/Resistant Gloves               |  |
| 10.   | RO (reverse osmoses) system              |  |
| 11.   | Refrigerator                             |  |
| 12.   | Freezer                                  |  |
| 13.   | Hydraulic lifters                        |  |
| 14.   | Trolley                                  |  |
| 15.   | Buckets                                  |  |
| 16.   | Double jacketed cattle                   |  |
| 17.   | Digital weighing balance (1kg to 500 KG) |  |
| 18.   | Thermometer                              |  |

|                               |                                                                                                                                                                                                                                     |  |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 19.                           | <b>Firefighting equipment</b> , fire extinguisher types and uses, fire hydrants, smoke detector, SCABA (Self containing and birthing apparatus), fire Alarms, manual and automatic emergency haters, safety shower, safety harness, |  |
| 20.                           | First aid kit                                                                                                                                                                                                                       |  |
| 21.                           | <b>PPE</b> – apron, face mask, gloves (chemical gloves, surgical, electrical & Steam gloves), gum shoes (rubber shoes) chemical suit, face shelled, safety helmet, air protectives, goggles                                         |  |
| <b>SLAUGHTERING MACHINERY</b> |                                                                                                                                                                                                                                     |  |
| 1.                            | Automatic bird receiving system                                                                                                                                                                                                     |  |
| 2.                            | Horizontal Chain Conveyor                                                                                                                                                                                                           |  |
| 3.                            | Live bird crate inventor                                                                                                                                                                                                            |  |
| 4.                            | Live bird crate Washer                                                                                                                                                                                                              |  |
| 7.                            | Blood Through                                                                                                                                                                                                                       |  |
| 8.                            | Blood pump                                                                                                                                                                                                                          |  |
| 10.                           | Scald Tank                                                                                                                                                                                                                          |  |
| 11.                           | Plucking Machine                                                                                                                                                                                                                    |  |
| 12.                           | Head remover                                                                                                                                                                                                                        |  |
| 13                            | Joint Cleaner                                                                                                                                                                                                                       |  |
| 14                            | Shackle washer                                                                                                                                                                                                                      |  |
| 15                            | Carcass Spray washer                                                                                                                                                                                                                |  |
| 16                            | Vent cutter                                                                                                                                                                                                                         |  |

|    |                           |  |
|----|---------------------------|--|
| 17 | Evisceartor               |  |
| 18 | Giblet Harvester          |  |
| 19 | Heart and lungs separator |  |